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Obstetric Hemorrhage*

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This discussion on obstetric hemorrhage will consider some of the more frequent causes of bleeding during pregnancy, labor, and the puerperium, together with some comparatively rare but important causes, and suggest some measures which experience has demonstrated to be effective both from the standpoint of prophylaxis and active therapy.

Post-Partum Hemorrhage

Post-partum hemorrhage is considered first because it is, by far, the most common type of obstetric hemorrhage encountered; and the principles involved in treating it successfully can be employed frequently in treating obstetric hemorrhage due to other causes.

Post-partum hemorrhage is defined as bleeding from the birth canal in excess of 500 c.cm. during the first 24 hours after birth. Hemorrhages which occur subsequent to the first 24 hours are called late hemorrhages; and the distinction between the two, as we will see a bit later, is of somewhat more than academic interest. Admitting the inaccuracies which acompany any attempts to measure blood lost, short of the actual weighing of blood, it is interesting to note the emphasis which has been placed on measured or estimated blood lost, postpartum. Not too long ago, 600 to 800 c.cm. was considered the upper limit of normal blood loss, postpartum. On my own service, I regard any loss of 300 c.cm. or above as abnormal. This interest in measured or estimated blood loss is most wholesome. It has been my experience that the lower one makes his arbitrary standard of what constitutes a post-partum hemorrhage and the more he attempts to stay below that limit, the fewer cases of post-partum hemorrhage he will have to treat.

The incidence of post-partum hemorrhage, according to Eastman¹, is of frequent occurrence and is observed in about 10 per cent of all deliveries. This is based on the concept of blood loss in excess of 500 c.cm. as constituting such a hemorrhage. In the Deaconess Hospital, Grand Forks, North Dakota, which uses the measurement of blood loss in excess of 500 c.cm. as constituting post-partum hemorrhage, the incidence of post-

partum hemorrhage in 1953 was 0.8 per cent, a very low incidence.

It is also interesting, and of some importance to note, that hemorrhages larger than 500 c.cm. occur, according to Eastman, with rather rapid decrease, percentage wise. For example: 600 c.cm. or more occur in 5 to 6 per cent of deliveries, 1000 c.cm. or more in 1.5 per cent, 1500 c.cm. or more in 0.3 per cent or once in about 335 deliveries, and 2000 c.cm. or more in 0.07 per cent or once in about 1400 deliveries in the number of the reports from which his figures were taken.

A study of the incidence of post-partum hemorrhage immediately raises a number of questions: How is blood loss determined? Is it by actual measurement of collected blood? Is it by visual estimate of blood lost? Is it by one or both of the foregoing, plus the adition of blood in sponges, on drapes, and on the floor. I mention these points to emphasize that while anything short of actual weighing of the blood lost is inaccurate, a combination of measuring all possible blood loss and estimating the balance does serve a useful purpose in limiting blood loss and making one conscious of its importance.

The immediate causes of post-partum hemorrhage are: 1) Uterine atony, 2) vaginal and cervical lacerations, and 3) retention of membranes and placental fragments. The latter seldom cause the early or immediate post-partum hemorrhage but are not uncommonly found in late post-partum hemorrhage.

Predisposing causes of post-partum hemorrhage can be divided into two main groups. Both are of considerable importance. The first group is predetermined and beyond the control of the obstetrician. If he recognizes this group in time, he is forewarned of the danger of post-partum hemorrhage:

- 1) The size of the baby. This is most important. A. M. Reich, M.D., found that the likelihood of post-partum hemorrhage with a baby weighing 5 pounds or less was 1 in 21; but with a baby weighing 9 pounds or more, the chances of excessive bleeding were 1 in 42.
- 2) Multiple pregnancy. Guttmacher, quoted by Eastman, stated that in 234 twin pregnancies at John Hopkins Hospital, the incidence of postpartum hemorrhage in excess of 600 c.cm. was 14.5 per cent, whereas in the clinic population at large it was 6.3 per cent.
 - 3) Hydramnios.

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- 4) Abruptio placentae, where the incidence of post-partum hemorrhage is about 1 in 4.
- 5) Placenta previa, where the incidence of postpartum hemorrhages rises to, possibly, as high as 1 in 2.

Of the controllable, predisposing causes for postpartum hemorrhage, I will list the following:

- 1) Operative delivery.
- 2) Deep general anesthesia.
- 3) Prolonged labor with maternal exhaustion.
- 4) Mismanagement of the third stage of labor.
- 5) Dehydration of the mother, usually as a corollary to 3).

With the foregoing definition, incidence and causes of post-partum hemorrhage in mind, it would seem pertinent to ask a few questions about the clinical picture of post-partum hemorrhage and, in answering those questions, attempt to arrive at a more accurate diagnosis and prognosis.

Which is the most frequently encountered type of hemorrhage encountered, post-partum; the sudden, massive hemorrhage? or the slow, steady moderate bleeding? What readily available criteria, other than noting the amount of the bleeding, do we have to determine the effect of the hemorrhage upon the condition of the patient?

In my experience, the most frequently encountered type of post-partum hemorrhage is the slow, steady moderate bleeding. To more accurately help in determining the status of the patient, frequent records of blood pressure, pulse, and respiration are of great value as well as hemoglobin determination and, particularly, red blood cell volume by hematocrit determination.

Except in the case where the uterus has been left unattended or under the observation of an inexperienced attendant, there should not be much difficulty in determining the source of the bleeding. Venous blood usually comes from the uterus. In the presence of a firmly contracted uterus and in the presence of bright red blood, the bleeding is usually from lacerations. In our Clinic we make it a routine practice to inspect the cervix immediately following the third stage of labor and lacerations are repaired promptly when found.

Treatment of Post-Partum Hemorrhage

What specific measures can be utilized immediately in both large and small hospitals to bring post-partum hemorrhage under prompt control? Certain life saving, specific measures must be applied immediately. Some of these will be further applicable, as we shall see, in other obstetric hemorrhages.

1) First and foremost—SAVE BLOOD! Put "the cork in the bottle" by rapid but gentle and effective uterine tamponade. I did not say pack the vagina! Nor does it make sense to me to massage or otherwise harass a relaxed and flabby uterus, indiscriminately, without giving it something to con-

tract upon when it has already demonstrated its inability to produce its own hemostasis. I feel certain that most obstetricians of experience have, at some time or other, used the closed fist as a temporary uterine tampon. I know that I have done so with excellent results. In the presence of an overwhelming post-partum hemorrhage, there is no time to arrive at niceties of diagnosis as to the cause of the hemorrhage. Stop it first! Save life! Then investigate.

- 2) Give ergonovine intravenously and pituitrin and/or pitocin intramuscularly.
- 3) Start plasma. Dried human plasma ought to be immediately available in every maternity, large or small. From our experience in North Dakota, where the small general hospital plays such an important part in obstetric practice, we have found it to be of tremendous importance. Dried human plasma, as prepared by the North Dakota State Health Department, Division of Laboratories, is packaged with its sterile diluent and, in this stable form, is distributed State wide. Its availability makes it particularly valuable to bridge the time lag while compatible blood is being obtained. This is a good time to remind ourselves that there is no adequate substitute for blood replacement in a severe hemorrhage: but the use of plasma, promptly, while compatible blood is being obtained may often be life-saving.
- 4) Combat shock. That may sound trite; but remember that, in the panic of the moment, some may forget that the application of external heat, the Trendelenberg position, and the giving of morphine may be lifesaving. Shock may follow hemorrhage so rapidly that, before the attendant is aware of it, the irreversible reaction may have occurred.
 - 5) Give oxygen by mask.
- 6) Get compatible blood ready for transfusion. This has been mentioned before. It is now again stated that there is no adequate substitute for whole blood. We are fortunate in North Dakota in that many of our larger hospitals have their blood banks and that blood bank service to the smaller hospitals is being expanded through the North Dakota Blood Bank. Where plasma is not available, a very poor substitute for it is 5 to 10 per cent dextrose in normal saline or in distilled water. It would give some temporary support while plasma and blood were being obtained.

The Background For Obstetric Hemorrhage

What has been said, in some detail, regarding the treatment of post-partum hemorrhage will apply equally well, in general, to the treatment of some other obstetric hemorrhages; but before dealing, specifically, with several of these, it seems pertinent to call attention to what I choose to call the background for obstetric hemorrhage. This may become evident when the obstetric patient first

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registers for prepartum care. It seems to me that minimum requirements in her blood examination include a hemoglobin determination, erythrocyte and leucocyte counts, Wasserman test, determination of the Rh factor, and the patient's blood group.

Personally, I feel that hematocrit readings, while a bit more time consuming, are more accurate than hemoglobin determinations in giving one a more accurate index of the degree of anemia. Anemia is present if the hematocrit reading is less than 30 per cent. Dividing the hematocrit by 3 in the patient who has a normocytic blood picture gives a hemoglobin concentration in grams by 100 c.cm. of blood.

Microcytic, or so-called secondary anemia, is by far the most common type found in pregnancy. Clinicians often disagree as to what constitutes an anemia in the pregnant woman. When the hemoglobin reading is less than 10 grams (about 70 per cent), the hematocrit less than 30 per cent, and the erythrocyte count less than 3,500,000, I call that patient anemic. She needs treatment. For many years I have postponed elective gynecologic surgery on patients whose hemoglobin was 65 per cent or less and whose erythrocyte counts were 3,000,000 or less until by hematinic and/or vitamin therapy or by blood transfusion I have successfully combated the anemia. This has been a wise and prudent policy. It is just as applicable to the pregnant woman who suffers from anemia.

Bleeding in pregnancy, even the so-called "spotting", is always abnormal. During the first trimester it is usually due to a threatened abortion but there are other causes, such as extensive cervical erosions or cervical polyps, to mention but two. Every pregnant woman ought to have her cervix inspected in a good light with exposure by a bivalve speculum as a routine part of adequate prepartum care. When bleeding or spotting occur, this is mandatory. The risk is minimal and the information obtained may be invaluable. Every year I see bleeding cervical polyps in pregnancy and extensive erosions which give rise to more or less bleeding, and I do not hesitate to treat them. It is not difficult to excise a cervical polyp, cauterize its base and the surounding erosion, and thereby stop the bleeding. I believe that abortion is less likely, if this is done, than if such a lesion is left untreated.

Carcinoma of the cervix uteri, while very rare in pregnancy, does occur. Screening by the Papanicolaou vaginal smear technique, in my opinion, should be reserved for those cervices which arouse one's suspicion on the routine inspection of the cervix in a program of adequate prepartum care. If such a smear is interpreted as suspicious or positive by a well-trained cytologist, I would insist upon circumferential biopsy of the cervix before instituting definitive treatment. This is not the time nor place to enter into such a discussion but it does seem highly important to remember that

minor spotting or bleeding may be the first indication of a carcinoma of the cervix.

I would not expect that one would be likely to diagnose a hydatidiform mole or an ectopic pregnancy solely from the presence of first trimester spotting or bleeding, even though such pathology usually becomes evident in the first trimester. Happily, both are numbered among the rarer causes in the background for obstetric hemorrhage; but anyone who has witnessed the shock which can accompany a ruptured ectopic pregnancy or the exsanguinating hemorrhage which may accompany the passage of a mole or its incomplete expulsion, will not fail to keep such possibilities in mind.

The mid-trimester of pregnancy might be called the no man's land of obstetric hemorrhage. If bleeding occurs from threatened abortion, it is likely to be more profuse than in the first trimester. I have not been too successful in stopping either cases of early or late threatened abortion where the bleeding, and especially the dark brown discharge, persists for over a period of five days after bed rest and sedation have been employed; and I have become less than enthusiastic about the efficacy of hormone therapy in such cases. One must also remember that the first slight bleeding from placenta previa may first become noticeable in the mid-trimester: but when conservative management of threatened abortion or of bleeding from any other cause is being treated conservatively. one should make frequent checks of the patient's hemoglobin or hematocrit and her erythrocyte count. Do not let her reach the point where a sudden exacerbation of bleeding might exsanguinate

If we have been watching the development of the patient's uterus closely during the mid-trimester, the chances are very good that we can detect either what appears to be a too rapid growth of it, which might suggest a beginning polyhydramnion, multiple pregnancy or hydatidiform mole, or a diminution in the size of the uterus, suggesting a missed abortion.

The chief sources of obstetric hemorrhage during the third tri-mester of pregnancy are placenta previa and abruptio placentae.

If placenta previa is diagnosed clinically, by soft tissue roentgenography or by contrast media in the bladder, I urge the following course of action:

- The patient should be hospitalized immediately, without either vaginal or rectal examination.
- 2) Get a complete blood count upon her and determine her Rh factor, Wasserman, and blood group, if those determinations had not been made.
- Have a minimum of 1500 c.cm. of compatible blood immediately available for transfusion. More may be necessary; less is likely to prove inadequate.
- 4) Forget the baby! Placenta previa is an obstetric, not a pediatric problem. When we improve

the status of the obstetric patient with placenta previa by hospitalization, replacement blood therapy when needed, and supportive treatment in general, we improve the chances of her baby for survival. But if, in the course of our treatment of the mother, we reach the stage of maximum improvement in her and then attempt to prolong the pregnancy because the fetus is on the borderline of viability or because it is premature, we subject the mother to the risk of another and more disastrous hemorrhage from which both mother and baby may die. Let us never forget that the first hemorrhage in placenta previa is practically never fatal but that subsequent hemorrhages, and especially those that occur near term, may be.

5) Plan the delivery of the patient with placenta previa on the soundest possible obstetric grounds. For all practical purposes, there are only two varieties of placenta previa, the complete and the incomplete. In either case, the placenta offers a bloody barrier to the emptying of the uterus. As far as I am concerned, a placenta which encroaches from one-third to one-half way across the cervical os is a complete placenta previa. A patient with such a condition should be delivered by Caesarean section.

If the placenta previa patient has had adequate blood replacement therapy and if her pelvis is adequate and one finds upon sterile vaginal examination that the placenta edge is not palpable or barely palpable on one margin of a soft, "ripe", or almost ripe cervix, he may be justified in rupturing the membranes, thus allowing the presenting part to come down into the pelvis and acts as a tampon alone, by means of Willett forceps, or by the Hillis impression method. If delivery by the vaginal route is thus elected three things need emphasis:

1) Have trained obstetric attendants constantly with the patient.

2) Avoid accouchement force; and by this I mean, especially, manual laceration of the cervix. A more euphonious term is manual dilatation. It is a misnomer. It is a manual laceration!

3) Have blood instantly available for transfusion. Never forget that the placenta previa patient, whether delivered by Caesarean section or by the vaginal route, is an excellent candidate for post-partum hemorrhage and shock.

Abruptio placentae is usually an additional symptom-complex associated with the toxemias of late pregnancy. Its prevention is, very largely, the prevention of the toxemias of pregnancy. Evidence has recently been accumulating which tends to show that fibrinogenemia may be the exciting factor in producing the hemorrhagic state which may vary from the mild and often occult and partial separation of the placenta to the severest of uteroplacental apoplexies. Further laboratory investigation is needed and is in progress to determine normal and critical blood fibrinogen levels, but it is

interesting to note the increasing number of case reports which are appearing in the literature dealing with the improvement in patients with abruption placentae and the true toxemias of pregnancy when fibringen is given. More commonly, it would seem. small blood transfusions have been reported as being very beneficial in cases of abruptio placentae where the bleeding has been minimal and shock absent, as well as in cases where hemorrhage and shock had both been present. But, regardless of the possible role of fibrinogen, per se, or as a constituent of blood, we must never forget that the factor of hemorrhage, as found in abruptio placentae, greatly increases the risk of shock and that shock, under such conditions, may quickly become irreversible. Fortunately, most patients with moderate abruption placentae will usually go into labor and deliver rather rapidly. If not, this is one instance where one is justified in rupturing the membranes and in giving pitocin in from one-third to one-half cubic centimeter doses.

Except for strictly obstetric indications, Cesarean section is seldom indicated in the treatment of this major complication of pregnancy. Except in the very rare instance of a severe utero-placental apoplexy, the so-called Couvelaire uterus, Cesarean section is likely to add greatly to the gravity of the situation, although an associated hysterectomy might, in still rarer instances, be necessary if one was faced with intractable bleeding. The problem is one of accurate diagnosis.

I believe we need to look with grave concern upon three other classes of patients as candidates for obstetric hemorrhage. These are the case of acute polyhydramnion, multiple pregnancy, and the "grand" multipara. In all three, the uterus has likely reached the limit of its contractile ability and uterine atony still remains a most potent source of post-partum hemorrhage in the three groups I have listed.

Coming to the conduct of labor, I wonder if the advice, not to let the sun go down twice upon the woman in labor, is still good advice? Just about a year ago, in Chicago, I had the pleasure of being Moderator of a panel discussion on Prolonged Labor at the annual Clinical Congress of the American College of Surgeons. While my collaborators, Doctors John B. Montgomery, C. Paul Hodgkinson, and Gerald W. Gustafson did all the work, I conducted a sort of "Gallup poll" of our audience, before they had a chance to ask us questions. What we wanted to know was what, in hours, was prolonged labor? Over twice as many votes were cast for twenty-four hours as marking prolonged labor as for any other time interval; so it is probable that the ancient advice still has some modern support.

But of greater importance than an arbitrary time limit for the duration of labor is, how well have we fortified the patient during her labor? If prepartum care has been neglected and the 954

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patient has gone into labor with some major handicap uncorrected or unrecognized, the opportunity for corrective treatment has passed; but let us hope that the woman goes into labor in good general condition and without any major obstetric complications. What can be done to reduce the risk of hemorrhage?

We can study the mechanism of her labor.
 This must never become a lost art.

2) Adequate but judicious sedation during labor is one of the greatest assets to the well-being of the average parturient. Labor is work! By alleviating the physical strain and the mental apprehension of labor, we have the finest possible opportunity to guard the woman in labor against both physical and mental exhaustion and thereby protect her against hemorrhage.

3) Combat dehydration, especially in prolonged labors, by the parenteral administration of dextrose in normal saline and/or sterile distilled water.

4) Avoid even mild degrees of anoxia when general anesthesia is given. Even mild anoxia increases the danger of post-partum bleeding. When it progresses to the degree of asphyxia, the hazard is a major one.

5) Operations for delivery must be done with gentleness and a minimum of trauma.

6) Respect the mechanism of the third stage of labor. More women die in this stage than in the other two combined! The placenta must separate before it can be safely expelled, regardless of what technique each obstetrician may employ for the conduct of this stage.

7) Inspect the birth canal, especially the cervix and the vagina, for birth injuries and promptly repair lacelations unless the patient's condition will not permit the added time necessary to do this. Prompt repair of birth injuries to the parturient canal immediately after the third stage of labor will do much to reduce bleeding and subsequent invalidism³

8) The post-partum patient should be watched just as closely as the post-operative patient to promptly recognize and treat the first evidence of hemorrhage and shock.

Two other causes of obstetric hemorrhage, although fortunately rare, must be considered in this discussion. Both of these conditions are acute surgical emergencies. The immediate problem in each is diagnosis.

The first is ectopic pregnancy which includes any gestation located outside of the uterine cavity. By far, the most frequent type is tubal pregnancy. This has been variously estimated to occur once in every 250 to 300 pregnancies.

I know of no signs and symptoms which are characteristic of an unruptured tubal pregnancy. Therefore, when we speak of the signs and symptoms of tubal pregnancy, we are speaking of the signs and symptoms which indicate rupture.

If one keeps the classic picture in mind in which, after a one or two month period of amenorrhea, there is slight vaginal bleeding or spotting, then a sudden sharp pain, unilateral, in the lower abdomen, followed by syncope and shock, he will be able to diagnose the minority of such cases; but the majority will probably not present such a classic picture.

In my experience, pain, usually sudden in onset, is present in almost all cases. It is very frequently generalized over the lower abdomen and, for associated signs and symptoms, amenorrhea and vaginal spotting will be elicited in the majority of cases if one takes time to get a detailed history. On bimanual examination, the most frequent and most reliable finding is great tenderness on manipulation of the cervix. More often than not, the patient with a rupture of a tubal pregnancy has an initial feeling of fainting, although true syncope and the sudden onset of shock is not immediately present in the majority of cases.

One can only generalize and say that the blood pressure tends to drop and the pulse rate to rise, commensurate with the amount of intraabdominal bleeding. Evidence of progressive anemia as determined by hemoglobin or hematocrit determinations are usually indicative of progressive hemorrhage from persistent or recurrent bleeding.

Differential diagnosis must include pelvic inflammatory disease, threatened or incomplete abortion, and appendicitis as the most common conditions likely to cause confusion and, more rarely, torsion of an ovarian cyst or intraabdominal hemorrhage from some other condition of pelvic origin such as rupture of a follicular or corpus luteum cyst.

It seems to me that we will make fewer mistakes in the diagnosis of ectopic pregnancy if 1) we are meticulous in taking the history of any patient in the childbearing period of life, and 2) if we remember that lower abdominal pain, whether it be in one quadrant or the other or generalized in any female from menarche to the menopause, may mean ectopic pregnancy.

There is only one treatment for ectopic pregnancy and that is surgery. The time for that surgery is dependent somewhat upon how rapidly the patient can be prepared for it by blood transfusion or, if compatible blood is not immediately available, by plasma or plasma-expanders. One must individualize his patients and the circumstances attendant upon each, but it is most certainly true that the patient with ruptured ectopic pregnancy is greatly fortified if blood is running into her veins at the time her surgery is done. The actual surgery should be limited to the control of the bleeding, usually by salpingectomy on the ruptured tube. The temptation to do additional surgery should be resisted.

One can only generalize about the mortality rate from ectopic pregnancy. It is an important cause of maternal death, and it is probable that Litzenberg's analysis of 1421 cases from six teaching clinics in 1947, as quoted by Eastman, giving a mortality rate of 2.4 per cent is probably close to the average. (Williams Obstetrics, tenth edition. page 517.) We can best conclude this brief discussion of maternal mortality following ruptured ectopic pregnancy by stating that failure to make a prompt diagnosis, failure to hospitalize early, failure to operate promptly, and failure to give adequate blood transfusions all contribute to a greatly increased mortality.

The second and last of the two rarer causes of obstetric hemorrhage I will present is rupture of the uterus. This brief discussion of it will be limited to rupture of the uterus after the period of viability of the fetus. While it is a rare accident, and the obstetrician or the general practitioner in private practice may practice a professional lifetime and not encounter a case in his own practice, it is a deadly accident when it does occur and probably accounts for 5 per cent of all maternal deaths.

When it occurs, there are only two requirements to be fulfilled if the mother's life is to be saved:

1) Prompt recognition of the accident.

2) Prompt surgical intervention.

The importance of the two foregoing statements becomes apparent when one remembers that with unrecognized rupture of the uterus, practically all mothers will die of hemorrhage or, if they survive the hemorrhage long enough, they may die of infection and that even with prompt recognition and prompt treatment the maternal mortality rate will vary between 21.7 per cent (Bill and Associates) to 42.3 per cent (Sheldon). As for the infant in a mother with a ruptured uterus, it would seem best to disregard its chances for survival in order not to detract from the urgency of attempted maternal

Both in pregnancy and in labor we need to consider 1) spontaneous and 2) traumatic rupture.

Without going into the merits or demerits of the dictum "once a Cesarean, always a Cesarean," if one will bear in mind that the uterus with a Cesarean scar in it is more likely to rupture than is the intact uterus, it may prove a safeguard against rupture in pregnancy and, certainly, in labor. I have never seen a spontaneous rupture of an intact uterus in pregnancy, and traumatic rupture of the uterus during pregnancy is wholly unknown to me.

In spite of the great increase in highway accidents and fractured legs and pelves, ruptured bladders, intraabdominal lesions, hemorrhagic and of great severity, chest injuries, brain concussions, and skull fractures in pregnant women, I have yet to see a pregnant uterus ruptured in a highway accident to date; but I will continue to observe all of my pregnant patients who may be brought to

our hospitals after automobile accidents very closely for this complication.

To summarize the causes of rupture of the uterus, after the period of viability of the fetus has been reached, it would seem logical to list the following:

1) Multiparity. I mention this first to call especial attention to the "grand multipara" whose previous, successful childbearing is no criterion that her uterine musculature has been able to retain the tonicity of youth. Somewhere along the line in her childbearing, her uterine musculature may have become fragile, either from hvaline degeneration or fibrosis; or symptom-free myomata or adenomyosis may have resulted in scarring or in a general weakening of the uterine wall.

2) Previous surgical scars. Chiefly those from previous Cesarean sections or myomectomies.

3) Prolonged labor. Without going into any further discussion of this subject, it should be recalled that any labor causes a thinning of the lower uterine segment, physiologically, to adequately prepare for the birth canal for the passage of the fetus. Anything which interferes with the orderly preparation of the lower uterine segment, whether it be cervical dystocia, anomalies of the bony pelvis. abnormalities of the fetus, tumors blocking or impeding the proper engagement of the presenting part, exhaustion of the mother or over-distention of the uterus, to mention just a few factors, may predispose to rupture of the uterus.

4) Accouchement force! I am using an old term to describe an ever-present danger. The desire to terminate a delivery, per vaginam, before the birth canal is ready for such a termination is dangerous. One need only mention a few points to illustrate

what is meant:

a) Manual dilatation of the cervix, in my opinion, is a misnomer. It is always manual laceration!

b) The higher one goes in the birth canal to effect delivery with forceps, the greater becomes the danger of rupture of the uterus. Happily, one seldom hears of a "high forceps" operation in this day of modern obstetrics; but the mid-plane forceps, so often and erroneously called a "low forceps" operation, is still productive of much soft tissue trauma, and lacerations following it may readily extend upward into the uterus.

c) Version and extraction remains a hazardous operation from the standpoint of rupture of the uterus. One need only recall the circumstances under which such an operation is usually done to realize the truth of that statement.

d) I have not been able to convince myself that manual removal of the placenta is as simple or as safe a procedure as has so often been described.

e) And, finally, oxytocics for the induction or continuation of labor need to be watched most carefully! They can become a chemical or hormonal accouchement force of great destructiveness.

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The symptoms and signs of threatened rupture of the uterus are:

- Strong and, usually, excessively painful uterine contractions without commensurate progress of labor.
- 2) Excessive lower abdominal tenderness, not relieved in the intervals between uterine contractions, if any free interval occurs and, sometimes, a rising contraction ring.
- 3) Restlessness, signs of exhaustion, and a rising pulse rate.
- 4) Failure of the presenting part to advance down the birth canal during uterine contractions, as noted on rectal examination. This is included, not because I believe it is important but rather because I have heard it advocated; and I believe it is not of great value and that it may give a false sense of security. One may be feeling only an enlarging caput! Of far greater importance are the first three symptoms and signs.

Actual rupture may give a deadly feeling of security, but it will be very short! The pain ceases. The patient relaxes and may even sleep. But then there follows a series of events which should soon indicate the tragic nature of the case.

Shock appears, and the tragedy is that actual rupture of the uterus may at first exhibit only the mildest symptoms of shock and thus lull the attendant into a false sense of security. Thus, priceless time may be lost in starting adequate therapy. But whether the initial symptoms of actual rupture of the uterus be mild or severe, one need not hesitate to prepare for laparotomy in the presence of a falling blood pressure and a rising pulse rate in such a case. External bleeding is unreliable and internal bleeding cannot be determined, accurately, until the abdomen is opened. Air hunger, pallor, sweating, nausea and vomiting, and subnormal temperature are all late signs.

There are but three things to emphasize in treatment of rupture of the uterus:

- 1) Blood replacement. This should be started just as soon as one suspects that he is dealing with a rupture of the uterus, continued throughout the laparotomy, and be available for the immediate post-operative period. Over a period of hours this may require from 5,000 to 6,000 c.cm.
- 2) Oxygen therapy. This accomplishes two things: a) It relieves anoxia and thereby may help to prevent the irreversible reaction and irreparable brain damage, and b) it helps to combat shock. The greatest efficiency is given to oxygen therapy if it is given by nasal catheter or the Boothby
- 3) Immediate laparotomy. The surgery for ruptured uterus under the conditions we have been discussing will usually consist of a hysterectomy, rapidly but neatly done.

Summary and Conclusions

I said in the beginning of this discussion that I would consider some of the most frequent causes of bleeding during pregnancy, labor, and the puerperium and then conclude the discussion with some remarks on rupture of the uterus after the viability of the fetus. But while all will agree that post-partum hemorrhage is the most common type of obstetric hemorrhage encountered by the individual physician in his obstetric practice and that obstetric hemorrhage from rupture of the uterus is the rarest, from a statistical standpoint, both of them and all of the other mentioned causes are very important when we consider the chief aim of any such discussion—the reduction of maternal mortality.

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Gynaecology

Malignant Disease of the Female Pelvis A Survey of Public Ward Cases in the Winnipeg General Hospital, 1939 - 1953*

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In 1931 the late Dr. J. D. McQueen, when Associate Gynaecologist to the Winnipeg General Hospital, instituted comprehensive plans for the treatment and follow up of the patients with carcinoma of the female genital organs admitted to the public wards of the hospital. In 19451 he published a survey of 116 cases of carcinoma of the cervix treated during 1931 to 1940 inclusive. The closing weeks of 1953 marked distinct departures from the routine of treatment laid down by Dr. McQueen. Three basic changes were evident: Cobalt 60 Beam therapy was used in an increasing number of cases, Dr. R. J. Walton of London, England, was appointed consultant and supervisor for all irradiation therapy, and Dr. B. D. Best initiated a series of Wertheim operations. In view of these changes it is desirable that the survey made by Dr. McQueen be brought up to date in order that the new regime shall have an adequate background for comparison in future years. The present study includes all cases of pelvic cancer admitted to the public wards and treated during the years 1939 to 1953 inclusive. Some of the patients had received treatment previously elsewhere by irradiation or surgery or both. All types of pelvic malignancies are reviewed but more detailed analysis is given to those cases of epidermoid carcinoma of the cervix for which full data are available.

It is axiomatic that a hospital with a public ward service admits patients with far advanced disease who have exhausted their financial sources through prolonged treatment and care, and such cases weight adversely the statistics of survival. However, for a true statistical compilation these moribund admissions must be included in the series.

The survey revealed a lamentable inadequacy of documentation. The personnel of the Tumour Service of the Winnipeg General Hospital strive to keep accurate and complete records of all cancer cases admitted to the hospital, but such records are dependent on histories and forms filled in by doctors and internes whose intentions appear to exceed their execution. Thus, less than two-thirds of the number of cases in this series were actually registered with the Tumour Service. The final total of 392 cases of pelvic cancer was obtained by cross-checking the records of the Tumour Service,

the hospital Record Office, the Forlong Memorial Radiotherapy Clinic records, and the record of ward discharges and deaths which is kept by the Gynaecology Service. In this way all sources of data were investigated to ensure complete statistics.

MALIGNANCIES OF FEMALE PELVIS

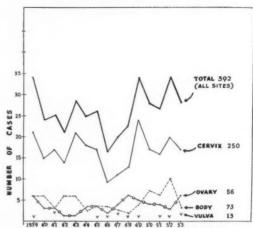


Fig. 1: Number of Cases Admitted Each Year

The series is small: only 392 cases. The admissions per year show an interesting relationship to economic factors in the community, as shown in Fig. 1. The ratio of cervix cases to the total number of annual admissions remains constant: this is not so in carcinoma of the corpus or the ovary. Carcinoma of the cervix was present in 250 cases; of the corpus in 73; of the ovary in 56; and of the vulva in 13. There were 18 cases of malignancy of the cervical stump, an incidence of 7.2% of the cervix cases. Two cases of chorionepithelioma with metastases to the lungs were admitted in 1942 and both are alive and well; a third case admitted in 1943 died within a few weeks. Two patients with carcinoma of the cervix associated with pregnancy died within the year of treatment. Two patients with Krukenberg tumours of the ovary died of metastases from the original malignancy within a year. There were two cases of sarcoma of the cervix, three of the corpus and one of the ovary. Primary adenocarcinoma of the cervix was present in four cases; in two other cases adenocarcinoma of the cervix was metastatic from bowel.

Fig. 2 illustrates the usual age distribution of the various sites of malignancy.

Staging of epidermoid carcinoma of the cervix varies with individual opinion and also with the amount of infection which is present at the initial

^{*}From the Department of Obstetrics and Gynaecology, Winnipeg General Hospital.

examination. 221 cases were staged as follows: Stage 0, 15; Stage 1, 25; Stage 2, 75; Stage 3, 74; Stage 4, 32. Similarly, grading of the tumour showed individual variation. 201 cases were graded as follows: Grade 1, 2; Grade 2, 130; Grade 3, 62; Grade 4, 7. Throughout the survey the ratio between Grades 2 and 3 remained constant at a

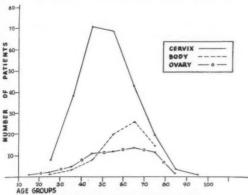


Fig. 2: Age Distribution in Decades

ratio of 2:1. In the early years covered by the survey the stage and/or the grade were not recorded in many cases.

The usual method of treatment for carcinoma of the cervix was two applications of radium about two weeks apart for a total dose of approximately 5000 mghrs. This was followed by deep x-ray therapy, usually in the neighborhood of 5000 R tumour dose, according to the judgment of the radiotherapist. During the years covered by the survey the personnel of the Radiotherapy Department changed repeatedly, thus wide variations occur in recorded roentgen dosage. A few cases received deep x-ray therapy before local application of radium because the lesion on admission was grossly proliferative or infected. Carcinoma in situ was treated by surgery.

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Carcinoma of the corpus was treated with intracavitary radium to a total of 3600 mghrs, followed by total hysterectomy and bilateral salpingooophorectomy six weeks later. Two extremely obese and hypertensive patients in the group received irradiation therapy only.

Patients with ovarian malignancy were operated upon and if feasible, total hysterectomy and bilateral salpingo-oophorectomy was done followed by deep x-ray therapy later. The extent of surgery w.s limited by findings at laparotomy, all patients subsequently receiving deep x-ray therapy.

Vulval carcinoma was treated by radical vulvectomy followed by bilateral wide node dissection. Two cases with vaginal spread of the tumour had abdomino-perineal resections.

Of the total series, three patients refused treatment and thirteen had such advanced disease that only palliative treatment was given.

The Tumour Service personnel is to be commended for the careful follow up of cases as out of 392 patients only 2.8% have been lost track of. 13 patients of the total series are known to have died from causes other than cancer.

SURVIVAL

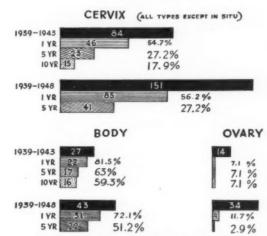


Fig. 3: Survival Rates of Malignancies of Cervix, Body and Ovary

The survival figures are not impressive and leave room for improvement in the future. It should be noted that as the total series is small, the statistical standard error is large. Five year survival rates for the patients admitted during 1939 to 1948 inclusive are as follows:

Malignancies of the cervix

(all types except in situ) 27.2% (\pm 3.5% S.E.) Malignancies of the corpus 51.2% (\pm 7.3% S.E.) Malignancies of the ovary 2.9% Malignancies of the vulva 15.4%

The derivation of these figures is shown in Fig. 3.

Complete data were available on only 134 cases of epidermoid carcinoma of the cervix. The five year survival rate in the various Stages is as follows:

Stage	1	***************************************	66.7%	(+	13.6%	S.E.)
Stage	2		44.4%			
Stage	3	***************************************	17.3%			
Stage	4	***************************************	8.0%	(+	5.4%	S.E.)

The derivation is shown in Fig. 4.

Five cases of carcinoma in situ, or Stage 0, were recorded during the years 1939 to 1948. Two of these were lost track of within a year; one died of diabetes eight years after treatment; two are alive with no subsequent evidence of disease. It is significant of the unsettled ideas regarding this type of carcinoma that two-thirds of the 15 cases in the study have occurred since 1948.

SURVIVAL OF STAGES

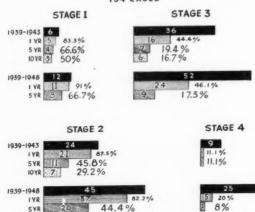


Fig. 4: Survival Rates of Epidermoid Carcinoma of Cervix

It was of great interest to note in the follow up histories the number of patients who were assessed at annual examinations to be free of symptoms and recurrence of disease for years after treatment, but who died of recurrence a few months later. It is obvious that the difficulty of differentiating post-irradiation fibrosis from induration of recurrent disease is very great. There were 16 recorded cases of complications from irradiation therapy, excluding transient bladder and bowel difficulties; nine fistulae occurred, six pathological fractures of the femur, and one demineralization of the spine. It is questionable if all these complications can be attributed solely to irradiation effects.

At the present time a Cancer Committee of the Gynaecology Service, under the chairmanship of Dr. B. D. Best, reviews all new cases of carcinoma of the female genitals admitted to the public wards. This committee is made up of members from the Departments of Radiotherapy and Pathology as well as Gynaecology, and its function is to act in a consultative capacity. The pros and cons of various types of therapy are considered in each case in order that the patient may receive the type of treatment best suited to her disease. While the committee deals primarily with public service patients, it is available for consultation regarding private patients also, at no charge to the patient The functioning of this committee coupled with the recent advances in techniques of therapy should result in much better survival rates in future.

(I am indebted to Dr. Margaret Owchar, Statistician of the Cancer Relief and Research Institute of Manitoba for the statistical computations of the survey, and to Miss Lizetta Nason and Mr. Geo. Wauchope for technical assistance in the preparation of the slides and graphs.)

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Cardiology

Iatrogenic Heart Disease Case Report

F. Gerard Allison, M.D., M.R.C.P. (London)

In 1949 a barber, aged 54, who had considered himself unable to work for 6 months, came to the office to obtain a second opinion as to the best method of treating his heart trouble.

He recalled a momentary pain in the left chest 20 years before while chopping wood. For 10 years he had noted undue shortness of breath on running. Six months before his visit, he noticed some pain in the left side of the chest with each stroke of a shovel. A few days later, after pulling heavily on a bar, he developed jabbing pain in the left chest with aching afterwards, lasting for a week, and was put in hospital. Electrocardiograph showed left axis deviation, minimal elevation of ST₁ and splitting of QRS-CF₂, i.e., minimal changes, presumably of no significance. He had a sed. rate of 45 mm. and a white count of 5,000. He was told by his doctor that he had had a coronary attack and accepted this diagnosis.

Since his time in hospital, he had done no work because he felt some pain in his left chest most of the time, particularly in bed. He had noticed some muscle tenderness. Several weeks later, he first noticed pain all down his arms and some numbness in his finger tips. Arm pain was made worse on arm movement and left arm movement would cause pain in the left chest. There was also some occasional aching in the occipital region for many years. He had gained 20 lbs. since he stopped work.

On examination: Physical examination was completely negative. BP 120/85, Hb. 87, sed. rate 8. Fluoroscopy, heart and lungs negative. Fluoroscopy of cervical spine showed a loss of normal lordosis. A tender spot in the left pectoralis major was injected with 5 cc's of ½% Novoaine. Electrocardiograph showed no change from the tracing taken 6 months previously at the time of his "attack." WR, negative.

He was seen on 7 subsequent occasions at approximately weekly intervals. The diagnosis of heart disease had been so firmly implanted that it was felt that the only way to convince the patient that his pain was fibrositic plus cervical disc was to abolish his pains. At a later interview, he admitted that he was able to walk rapidly on a cold day without symptoms. He had noted that jarring would sometimes initiate the pain in the

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left chest. One night he had mild pain in the left chest and left arm lasting for 6 hours. Another night he noticed shortness of breath for 15 minutes.

Various tender spots in the left pectoral region were injected at different visits. A B.M.R. was found to be —6%. Two months after the first visit, he was free of symptoms and had found a job as a janitor. He reported again in April, 1954. He is still doing heavy work as a janitor without dyspnoea or discomfort. He still had an occasional aching in the left breast lasting for hours but was no longer worried about it. However, he would sometimes take nitroglycerin for this pain and noted with satisfaction that the pain would clear away in half an hour. It was explained to him that nitroglycerin was not an ordinary pain tablet and that its maximum duration of action was 15 minutes. Physical examination was again negative.

Comment

This case illustrates how an uncritical physician can turn a useful citizen into an unemployed hypochondriac. This man had a physically normal heart and his dis-ease was iatrogenic (doctor caused).

The symptoms suggestive of cervical disc lesion did not persist long enough for further investigation. One of the most useful ways of confirming this diagnosis is to note the momentary disappearance of arm pain and finger numbness when the head is forcibly lifted off the shoulders. The association of pectoral muscle fibrositis with cervical disc is not uncommon and the symptoms often appear simultaneously, as the neck may be tensed involuntarily when the chest pain hits the patient. The association of chest pain and arm pain is naturally suspicious of coronary disease. However, the duration of pain, the lack of relation to exertion, the finding of tender spots in the chest muscle and the relief of arm pain by head lifting will usually clarify the diagnosis.

Severe cervical disc symptoms may often be sent into remission by 100 mg. of thiamin I.V. daily for 4 days as described by Elmer James, C.M.A.J., Vol. 61, 1949, 456-462. Whether the thiamin acts as an analgesic or in some other way is unknown.

Cancer

Earlier Diagnosis of Gastro-Duodenal Cancer

Research Possibilities

Marilyn Bondar, B.Sc., Fred Burgoyne, M.D.,
and A. J. Glazebrook, M.D.

From Depts, of Pathology and Medical Research,
St. Bontface Hospital

"... evil in the bud is easily crushed."
—Cicero.

Despite the optimism of an article which recently appeared in the Manitoba Medical Journal, suggesting that there is nothing to the diagnosis of cancer, the prospects of cure when it affects the gastro-intestinal tract are not good. For instance, in carcinoma of the stomach, the absolute five-year survival rate is only 5 per cent.

Most people agree that earlier diagnosis offers the hope of more certain eradication of the tumours, and if some screening procedure could be found, comparable in its ease of applicability to mass radiography of the lungs for tuberculosis, a forward step would become possible. There are pessimists, of course, who, disagreeing with Cicero's statement as far as cancer is concerned, think that work on such lines is doomed to frustration; but this is a minority view which should not be allowed to hinder progress in the field of diagnosis.

In the case of the patient seeking relief from symptoms, radiography offers a good prospect of confirming suspicions; but even quite large carcinomas may occasionally be missed by competent radiologists, and this mistake is the more easily made when the lesion is young; a mistake which cannot always be ruled out by endoscopy. As things are — neither radiography — with its possibilities of error in detecting minimal lesions; or endoscopy, with its chances of direct viewing limited by anatomic considerations, can be thought of as screening tests.

There are other methods, and a brief review of their prospects is offered.

1. Exfoliative Cytology

There is evidence for and against the value of cytology as a screening test for cancer of the cervix; certainly it has reached a stage where the exact place it may play in diagnosis requires serious consideration, and it has claims to be used as a routine procedure in women of a certain age.

Such progress cannot be reported for the stomach and duodenum. Papanicolaou claimed the first diagnosis of gastric cancer by cell studies in 1946, on material obtained by simple aspiration; but he evidently realized the limitations of this method and the gastric abrasive balloon was introduced in 1949. A tube with a double lumen is used — and gastric contents are aspirated through one of the lumens — while the other is used to inflate a balloon covered with black silk veiling. Manipulation of the balloon within the stomach dislodges cells—which may then be recovered from the aspirated material, or from the silk netting itself when the balloon is removed.

An accuracy of 95.7 per cent for positive reports has been obtained but an error of 25% occurs in negative reports.²

While the method produces a richer yield of malignant cells than is likely to be obtained by simple lavage—a great practical difficulty arises in its use, in that it is not easy to persuade patients to swallow the netting-covered balloon. Much time and patience by an experienced operator is required for this manoeuvre, even in the most cooperative of subjects, while for those to whom tube-swallowing is repugnant the method becomes impossible.

It cannot therefore be employed as a routine screening procedure, and this has led to a search for a more acceptable way of dislodging malignant cells. Modifications of the abrasive balloon, such as the Gastric brush; which is passed while enclosed in a capsule, and subsequently uncovered in the stomach; are little less objectionable than the balloon, and do not seem to exfoliate malignant cells so well. Another approach is the idea of using digestive ferments in the place of mechanical abrasion, and papain and chymotrypsin techniques have been elaborated in some clinics.

These techniques, as far as the patient is concerned, are no more objectionable than a fractional test meal. The accuracy of 67% for positive diagnoses claimed by Traut; 11 using the mucolytic and proteolytic digest papain; is not so good as the results got with the abrasive balloon, and latterly much work has been done with chymotrypsin. The enzyme has been prepared for research purpose by the Armour Laboratories, and may prove to be a superior agent. Certainly, Rubin¹⁰ is an enthusiastic advocate for it; currently he is engaged in screening patients who have pernicious anaemia and achylia with chymotrypsin, in the expectation of finding unsuspected cancers. We have in this hospital a supply of chymotrypsin* and at present are comparing the results obtained with it to those yielded by the abrasive balloon.

Diagnex, a cation exchange resin with quininium cation; when swallowed causes quinine to appear in the urine if acid is present in the stomach. While it cannot take the place of ordinary fractional gastric analysis, it does offer an easy way of discovering people with achlorhydria who require to do no more than swallow a pill and have their urine tested within two hours.

In time some method may offer the cytologist diagnosable material in a high proportion of cases, without the necessity of employing an abrasive; and there do appear grounds for optimsm—for a combination of Diagnex and improved cytological techniques may well make a screening test a practical possibility in patients with achlorhydria.

Cancer involving the duodenum poses more difficult problems; the obtaining of cells for study from this organ is most tedious and yet offers but mediocre rewards; it is hardly to be thought of except as an additional investigation in cases of obscure dyspepsias. Where cancer is suspected laparotomy would still seem to be preferable for confirmation of the diagnosis and certainly there is no immediate prospect of the technique becoming a screening test.

In both stomach and duodenum, apart from the question of the practicability of cytologic studies, there is another point to think about. Most workers agree that cytology does offer the prospect of early diagnosis, before much change can be seen by radiologists, but is it early enough? For cells to exfoliate, there must be a surface affected by the lesion, and those which are intramural are beyond the searches of a cytologist.

It is possible, however, that intra-mural lesions may cause some change in the motility of a hollow organ, either by interference with nerve conduction or muscle contraction; and they are also likely to cause increase in the thickness of the visceral wall. Thus studies of the electrical potential variations, of the motility patterns, or of the visceral thickness by ultra-sonic waves may make even earlier diagnosis feasible.

Electro-gastrography and motility disturbances

The gastroscopist must pay great attention to gastric motility in considering a diagnosis of malignancy; is there an easier way of studying changes? The electro-gastrograph shows electrical potential differences; the principle is similar to the electrocardiograph and one electrode is put into the stomach. There is still no consensus of opinion as to the causation of the changes; some regard the electrogastrogram as a continuous record of stomach motility and secretory rate. Ingram claims that the pH does not affect the potential difference and thinks that part of the pattern seen is due to action currents in the nerve plexuses because he has not found it associated with muscular contractions.

The eager optimism of early workers with the electrogastrograph has been tempered by experience. Claims were once made that striking changes in the patterns occurred in gastric and duodenal ulcer, and a low rate of activity in cancer. Great hopes were entertained that a new and useful diagnostic tool was at hand. These hopes have been unfulfilled. It is not yet possible to tell a patient what is wrong with him by studying an electrogastrogram; and there is general agreement about only one thing, that changes in the patterns can be seen. What they signify is still a mystery.

Alterations in the motility pattern of the small bowel, persistent in nature and remarkable in shape, have been shown to occur by one of us; and it is possible that infiltrating lesions, not necessarily arising in the first place from the

^{*}Donated to the hospital by the Armour Research Laboratories, Chicago.

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gal n is Il n a t bowel, may be one of the many causes of such alterations. One writer, 12 in fact, has demonstrated the existence of duodenal motility disturbance in the presence of cancer of the pancreas, with involvement of the solar plexus; but as with the electrogastrogram too little is known about the subject. The recording of bowel motility by putting balloons or transducer valves into the gut does not offer the prospect of becoming a screening test, but the development of radiological techniques for studying bowel motility more closely may help. At present these lines of investigation are of little practical importance to the clinician. Echography

This fascinating technique utilizes ultra-sonic pulses for the determination of the histological structure of tissue, and has been developed from the principles underlying Radar. It was Wild and Reid¹³ who suggested the general term "Echography" for the whole subject of such examinations. They name the basic electronic machine required the "Echograph"; and call the applicator units or probes "Echoscopes."

In their preliminary studies, they found with their echograph that non-maligant tumours of the breast returned as much sound or less than normal tissue at comparable depths in the tissues; malignant growths, on the other hand, returned more sound than did normal tissue at comparable depths. The method has been applied clinically, and the differential diagnosis between malignant and nonmalignant breast tumours has been offered by the echograph and later confirmed by biopsy.

This success has been gained with palpable tumours of an easily accessible organ, the breast. By further refinements in the echograph, such as the use of the highest possible frequency of 15 megacycles as a starting point for the studies, Wild and Reid believe they have made feasible the detection and diagnosis of irregularities of tissue structure of such small size as to be of value in the control of cancer. In other words they hope

they can establish a practical means for the mass screening of people for cancer. A critical examination of the principles involved, and the results achieved; suggests that their optimism is not without merit for easily accessible organs such as the breast, the thyroid, and the cervix. Echoscopic scanning in these sites causes no discomfort to the patient and while technically difficult would prove quite as acceptable to the public as mass radiography.

Unfortunately the stomach and duodenum are not accessible in this way. There are many problems to be overcome before scanning of the stomach can be made possible, and at this stage it is difficult to see how an echographic scanner can ever be made more acceptable to the patient than Papanicolaou's abrasive balloon.

Summary

A screening test for the detection of cancer of the stomach is desirable, in order to allow a diagnosis being made before clinical manifestations become evident. The research possibilities have been briefly surveyed. We in this hospital have settled for a study of methods of improving cytological techniques as being the most practical procedure at the present time; motility disorders of the bowel are also being observed.

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FRANK W. HORNER LIMITED

Orthopedics

James Syme Alexander Gibson, F.R.C.S. (Eng.)

In a former communication it was noted that Syme's amputation at the ankle joint had received unfavorable comment from English surgeons as recently as 1939. It is refreshing to discover that in 1868 a book was published in New York entitled "Mechanical Surgery," and written by D. E. D. Hudson, in which the Syme amputation is described in most laudatory terms.

"No amputation of the inferior extremity can ever compare in its value to the subject with that of the ankle joint originated by Mr. Syme. Twelve years of experience . . . have afforded me assurance that it is not capable of being improved in its general character. It is scientific, practically of the utmost use and subservient to the best interests and happiness of the patient. . . . The subjects of such amputation scarcely realize their loss; with legitimate appliance they appear every way whole. The thickened tissues are accustomed to the hardest services and to bear the heaviest burdens. . . . One gentleman for whom I applied a foot has walked 35 miles in a day on a hunting excursion, while his companions did not suspect that he was otherwise than whole. ... Of 50 recent cases which have come into my hands for final treatment by mechanical means, not one has failed of a highly gratifying success. ... I never have a patient with a Syme amputation make use of a cane, nor walk in any other than the most natural gait.

The following is the expression of a committee of the medical members of the Sanitary Commission on the subject of amputation of the foot and ankle, viz.—

Preference should be given to Syme's operation as affording a minimum mortality with a stump best adapted to an artificial limb. An artificial limb may be applied to a Syme's stump which both relieves deformity, and renders the patient's gait free from the slightest halt.

Stephen Smith, Chairman Valentine Mott Gordon Buik John Watson Alfred C. Post Willard Parker Ernest Krakowizer W. H. Van Buren."

Surely it is a tribute to the procedure that, nearly a century later, one can add nothing to and subtract nothing from this fervid eulogy.

There is no profession that offers to its members a richer, fuller, more satisfying life than does that of the doctor. To enjoy it to the full he must bring to it all the enthusiasm and devo-

tion of which he is capable. Such a personality was the subject of the present sketch. In some ways he was fortunate, for he lived at a time when the Edinburgh school of surgery was at its peak. James Syme was born in Edinburgh in November, 1799, of well-to-do parents. From his father he inherited a tenacity of purpose and a faculty of perseverance that stayed with him throughout his whole life. During his schooldays he was devoted to the subject of Chemistry. He matriculated at the University in 1815, and took classes in Latin, Botany, Natural History, Mathematics and Philosophy. Later he attended a class in Chemistry. His interest in Botany persisted throughout his life, and his study of Chemistry. uninterrupted since schooldays was pursued not only at the University but in his own lodgings. On 5th March, 1818-he was not yet 19 years of age-he sent a short communication to the "Annals of Philosophy" in which he described a new solvent for indiarubber derived from coal-tar. The letter was not published until August, and soon after that a Glasgow manufacturer named Mackintosh took out a patent "for the making of waterproof cloth by means of caoutchouc dissolved in coal-tar naphtha." Had Syme followed the advice of his friends, not only might he have reaped a large fortune, but we, today might be referring to our rainproof garments as "Symes," not "Mackintoshes."

We do not know what induced him to study Medicine. Probably the spark was ignited by the brilliant Robert Liston who was at this time assisting Dr. Barclay, an anatomist of outstanding renown. When Liston left Barclay to teach Anatomy on his own account, Syme went along with him as Assistant and Demonstrator. By 1822 he was in charge of the dissecting-room. Unfortunately Liston and Syme quarreled, so that in 1824, under his own aegis, Syme delivered a course of lectures on Surgery and Anatomy. Gradually his interest veered towards Surgery, impelled largely by the unsavoury methods adopted to secure a supply of subjects for dissection. The venture into pure Surgery proved a striking success so that in the year 1829 his class numbered 250 pupils. At this time he sought a position on the staff of the Royal Infirmary, but he was not appointed, probably from considerations of local politics.

This apparent set-back was met by him in a characteristically bold way. He decided to establish a surgical hospital for himself. For this purpose he secured Minto House and set it going with 24 beds. The "Edinburgh Surgical Hospital" continued in operation until 1833. During the three and a half years of its existence it dealt

with 8,097 patients of whom 1,094 had been admitted. One of the principal assistants during this time was Dr. John Brown of whom more at a later date. The balance sheet for this period is interesting.

0.					
Receipts	From	1829	-	1833	-

Contributions		918	- 3	3 - 5
Students' Fees	***************************************	222	- 8	3 - 0
From Mr. Sym	ne	1775	- 11	- 4
	_		_	_

£2916 - 2 - 9 Expenditures From 1829 - 1833

Furniture and Medicine	653	-	9 -	1
Rent, Taxes and Wages	716	-	19 -	8
Maintenance of patients	1500	-	0 -	31/4
Miscellaneous	113	-	12 -	7.

£2984 - 1 - 71/4

From this it is clear that in addition to his arduous work he was out of pocket to the extent of a very substantial sum of money. In 1833 he was appointed to the chair of Clinical Surgery in the University of Edinburgh, and this carried with it a place on the staff of the Royal Infirmary. This added responsibility made it impossible for him to give as much time to the work at Minto House, and there was for a short period a danger of the institution being closed. As the result of a public meeting it was resolved to carry on the hospital under the care of three former assistants of Mr. Syme, while the Professor continued to act as operating and consulting surgeon. In this manner the hospital carried on for another fifteen vears.

When Syme assumed his duties on the staff of the Infirmary, the senior surgeon was Robert Liston. The former friendship had turned to open hostility, so that when in 1835 Liston left to take up the duties of the chair of Clinical Surgery in London, Syme was left in unchallenged possession of the field. He became the outstanding surgeon of Scotland. It is pleasant to record that in 1839, Liston held out the olive branch. Syme probably had retained some affection for his old mentor, and could not but recognize the extraordinary dexterity and skill of his former associate: at any rate it is gratifying to know that the breach was healed and the friendship was resumed. It lasted until the death of Liston in 1847.

"Dear Syme,

It is long since I addressed you, but . . . I could not resist the temptation of saying a few words with the view of bringing about a reconciliation. This ought not to be difficult now; for myself, I can say that I have no angry feelings towards you, and you ought not to have any hostile feelings towards me. I have long thought of having our differences adjusted, and I trust you will not throw any obstacle in the way. . . . Will you allow me to send you a copy

of my last book? Write and tell me that you wish to have our grievances and sores not plastered up but firmly cicatrised. Believe me, yours faithfully.

Robert Liston.

I am not so bad as you believe me to be."

Liston's sudden death in 1847 was followed by the offer to Syme of the chair of Surgery in University College London. After some hesitation, he decided to accept the opportunity of introducing to the metropolis the system of clinical teaching that he had inaugurated in Edinburgh. He left Edinburgh in February, 1848. He found the conditions of the appointment uncongenial, and in early May of the same year he placed his resignation in the hands of the Council of the College. His return to Edinburgh was hailed with delight by his many friends, and with considerable relief by the Lord Advocate and the Home Secretary who had not yet succeeded in appointing anyone to follow him. By July he was re-appointed Professor of Clinical Surgery, and resumed his old place as one of the surgeons to the Royal Infirmary. From that date until his resignation in 1868, his life was one of unremitting industry, in operating, in teaching, in writing, in administration.

It is difficult for us who carry on our work in specially equipped rooms, with the protection of expert anaesthesia, with aseptic precautions, with blood transfusions and the sheltering umbrella of anti-biotics, to put ourselves in the position of the surgeons of the early 19th century who had to operate in badly lighted surroundings with no skilled nursing assistance, with no preoperative preparation, and no informed after care. It is little wonder that in those days great stress was laid on manual dexterity and speed. The description by Cock of the first major operation under ether anaesthesia performed by Liston in 1846, is too long to quote, but the reference is readily available. It records a thigh amputation done in less than 30 seconds and states that the patient was back in bed 5 minutes after leaving it. Feats such as these are scarcely within the compass of the present-day surgeon.

In those days, aneurism was a fairly common surgical problem. In the August number of the Monthly Journal of Medical Science, Syme records a case of "Traumatic aneurism of the common carotid artery." The patient, aged 20, had been stabbed in the neck in a brawl.

"The aneurism which was about the size of an orange extended in a transverse direction from the trachea to the outer edge of the sterno-mastoid muscle, and downwards close to or rather under the clavicle, throbbing throughout with great force. Nearly at the centre there was a cicatrix, showing where the wound had been. In the course of a few days . . . there was a distinct enlargement of the tumor, so that it seemed

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necessary to decide without delay upon the course to be pursued.

The case was obviously one of great responsibility, involving as it did not only the patient's life but also that of his assailant. There could be no doubt that if the aneurism were allowed to proceed, it would, before long, prove fatal by interfering with respiration or opening inwardly, if it did not do so on the external surface. On the other hand, it was obviously impossible to tie the artery below the tumor, while an aperture could not be made into it without subjecting the patient to urgent and extreme hazard.

Now there seemed to be not only a great risk of the haemorrhage proving uncontrollable, but also a hardly less formidable danger of injuring the internal jugular vein. Having carefully balanced these different considerations, I arrived at the conclusion that it was my duty to give the patient his only chance of escape, and, encouraged by the concurrence of my colleagues, proceeded to perform the operation.

Chloroform having been fully administered, and the patient being placed upon his back, with his shoulders slightly elevated. I pushed a knife through the cicatrix and followed the blade with the forefinger of my left hand so closely as to prevent any effusion of blood. I then searched through the clots and fluid contents of the sac for the wound of the artery, and found that pressure at one part made the pulsation cease. Keeping my fingers steadily applied to this point, I laid the cavity freely open both upwards and downwards, turned out the clots and sponged away the fluid blood so as to get a view of the bottom, which presented the smooth shining aspect of a serous membrane without the slightest indication of either the artery or vein that could be seen or felt.

In order to make the requisite dissection. I next attempted to close the orifice by means of forceps, but found that it had the form of a slit, which could not thus be commanded. It was also so near the clavicle that pressure could not be employed below it, and to my still greater concern, lay on the inner or tracheal side of the vessel so that the compression required for its closure, instead of being backward upon the vertebrae, was outwards upon the vein. In these circumstances, it seemed proper so far as possible to lessen the opposing difficulties, and I therefore ran a bistoury through the skin and the sternal portion of the sterno-mastoid, so as to divide this portion of the muscle together with the superjacent integument. I then seized the edge of the slit in the artery as it lay under my finger with catch forceps, and desired them to be held so as to draw the vessel towards the trachea, then carefully scratched with the point of a knife until the arterial coat was brought into view at its external edge, a little above the aperture, when

a ligature was passed by the needle and tied. I repeated the same procedure below the wound, and when it was completed had the satisfaction of finding that my finger could be withdrawn without the slightest appearance of bleeding, instead of the tremendous gush which had previously attended its slightest displacement. The ligatures separated on the tenth day, and the patient who had suffered no inconvenience from the operation was dismissed on 17th July.

I have thus particularly related the steps of this operation, because it was by far the most arduous that has ever occurred in my surgical experience When venesection was more in fashion than it is at present. I had nine times occasion to operate for traumatic aneurism at the bend of the arm; and therefore was in some measure prepared for the dfficulties to be encountered, which nevertheless proved nearly insurmountable. Indeed, even now I cannot without a shudder, reflect on my position when the movement of one hand must have instantaneously caused a fatal hemorrhage from the carotid artery, and a slight deviation of the other would have given issue to an irrepressible stream from the jugular vein."

Another case of aneurism introduces us for the first time to "Mr. Lister."

"D. L., 47, had a large tumor which completely filled the left axilla, and greatly distended the muscles before as well as behind the shoulder. . . . In the course of a few days after admission the tumor enlarged considerably, and assumed a dark colour at some parts of its surface; while a slough formed over the scapula, where the pressure was most severe. At the same time the patient began to wander in his ideas, and his pulse rose to 130. It was therefore manifest that unless some decided steps were taken without delay to afford relief, the result must very soon prove fatal. . . . On February 1st (1860), chloroform having been administered. I made an incision along the outer edge of the sterno-mastoid muscle, through the platysma myoides and fascia of the neck so as to allow a finger to be pushed down to the situation where the subclavian artery issues from under the scalenus anticus and lies upon the first rib. I then opened the tumor, when a tremendous gush of blood showed that the artery was not effectually compressed; but while I plugged the artery with my hand, Mr. Lister, who assisted me, by a slight movement of his finger, which had been thrust deeply under the upper edge of the tumor and through the clots contained in it, at length succeeded in getting command of the vessel. I then laid the cavity freely open and with both hands scooped out nearly seven pounds of coagulated blood as was ascertained by measurement. The axillary artery appeared to have been torn across, and as the lower orifice still bled freely, I tied it in the first instance. I

next cut through the lesser pectoral muscle close up to the clavicle, and holding the upper end of the vessel between my finger and thumb, passed an aneurism needle so as to apply a ligature about half an inch above the orifice. . . . Everything went on favourably afterwards. . . . He was dismissed on March 14, six weeks after operation and before long resumed his employment, in possession of perfect health."

In September, 1853, Joseph Lister had migrated from London to Edinburgh. Between him and James Syme a warm relationship was established which was never clouded. By his marriage with Agnes, the eldest daughter of Syme, Lister became the son-in-law of the distinguished Professor, and acted as his assistant and substitute on many occasions. Lister's epochal work on the treatment of sepsis was well appreciated by his fatherin-law. Indeed the first contribution to the British Medical Journal for the year 1868 was a paper by Syme "On the antiseptic Method of Treatment in Surgery." The concluding lecture of a winter course on Clinical Surgery was published in April, 1868, in the same Journal in the course of which he says:

"As the most important subject of our attention, I may first mention the antiseptic treatment, which, if it have not already done so, is certainly destined in no small degree to revolutionize the practice of Surgery."

The name of Syme will endure, if for nothing else because of his contribution of the method of amputation at the ankle joint. His original and independent mind, however, led him to the practice of excision of joints in place of amputation, and, dissatisfied by the results of the treatment of stricture by internal urethrotomy, he published no fewer than 5 papers on the subject of "The treatment of Strictures by external incision." His activity ranged over the whole field of Surgery. and we find articles on "Case of Osteo-sarcoma of the Lower Jaw" (1828); "On Excision of Diseased Joints" (1831); Diseases of the Rectum (1838); On the power of the periosteum to form new bone (1839): On Fungus of the Testis (1847); On a new mode of removing cartilaginous bodies in the knee joint (1852); Removal of a foreign body from the larynx (1853); On the operation for split palate (1854); On the radical Cure of Reducible Hernia (1861); Excision of the Scapula (1863); Excision of the tongue (1865); Elephantiasis of the Scrotum (1866).

Honours were showered on him from all parts of Europe. In 1868 he suffered a stroke which involved his left side and in that year he resigned the Chair to which he had brought such signal prestige. His death occurred in June, 1870. He was buried in the family vault, St. John's Episcopal Church, Edinburgh.

It was the fate of Syme to live in a generation when differences of opinion were expressed with great acrimony, and professional feuds were conducted with the utmost bitterness. Time, however, tends to smooth out the inequalities of human conduct and we can pay impartial tribute to the great men of yesterday without blame for their pugnacious qualities, only remembering what they gave us and what they strove to give. In the "Scotsman" newspaper of 28th June, 1870, there is a resume of Mr. Syme's character and achievements as a surgeon. It is believed to be from the pen of Joseph Lister.

"As a practical surgeon Mr. Syme presented a remarkable combination of qualities; and we have not known whether to admire most the soundness of hs pathological knowledge; his skill in diagnosis resembling intuition, though in reality the result of acute and accurate observation and laborious experience, well stored and methodised; the rapidity and soundness of his judgment; his fertility in resources as an operator, combined with simplicity of the means employed; his skill and celerity of execution; his fearless courage; or the singleness of purpose with which all his proceedings were directed to the good of his patients.

The most prominent feature of Mr. Syme's character was uncompromising truthfulness; and with the love of what was true and noble was combined in a corresponding measure, the detestation of what he believed to be counterfeit and base. As he expressed his sentiments with the utmost candour, he not infrequently gave personal offence though, in the great majority of cases, this was only transient. But whatever may have been thought of his free speaking by some individuals, the profession and the world at large owe him an incalculable debt of gratitude for the noble stand he was at all times ready to make against meanness and falsehood."

The aura of Syme's greatness still lingers about the corridors of Edinburgh Royal Infirmary, and through his apostolic successors the spirit of his work and of his teaching has been disseminated throughout every quarter of the globe.

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Children's Hospital, Winnipeg

Ward Rounds
Edited by Wallace Grant, M.D.

Sepsis in Infancy
The Children's Hospital, Ward Rounds,
June 17, 1954

Chairman: Dr. Bruce Chown

"An Infant With Pneumococcal Septicemia, Electrolyte Imbalance and Jaundice"

Presented by Dr. G. Holman, A-4687

The first infant now 2 months old was born prematurely at the Misericordia Hospital. The mother who was unmarried was the subject of toxaemia. The infant weighed 31/2 pounds at birth and was kept in an incubator for about one and a half months and was discharged to the care of friends of the mother who rarely saw her. She appeared to be well until June 9th, the mother had then gone over to care for the child and noticed that she was a bit cranky. The next morning she thought the baby was somewhat vellow. On admission to hospital on June 10th the chief findings were a mild degree of jaundice evident in the skin and the sclerae, and rapid respirations (about 70 per minute) almost Kussmaul in type. It was felt that this was a metabolic disorder of some sort and fairly intensive investigation was begun immediately.

At 4 p.m. on June 10th the potassium was 8.9 milli-equivalents per litre, sodium and chloride were elevated, the pH was 7.05, the CO, was 7.7 milli-equivalents per litre, the serum bilirubin was elevated, the plasma proteins and hemoglobin and blood sugar were all relatively normal and



the leukocytes were increased to 21,500. child was quite dehydrated, with depressed fontanelle, but general tissue turgor was fairly good and the tongue was moist, and although there had been two loose movements, the afternoon of admission, there had been no vomiting and the stools were yellow. We found it difficult to explain the picture and were cautious to treat her, so gave her only glucose and water that night. During the night there were more loose stools. paler in colour. The next morning when chemical analyses of blood were repeated, there was little change from the findings of the day before except that the hemoglobin was 7.7 grams. The fontanelle was no longer notably depressed and it appeared that we had rehydrated the child without being any clearer as to the basic lesion and its treatment.

Dr. Israels saw the baby in consultation that morning and while it was being examined it passed a bloody stool and vomited blood. The possibility of galactosemia was raised but there was no galactose detected in the blood and the

TABLE I. (Patient No. 4687)

	Hgb. Grams.	VBC /ourse.	Diff.	Ma mEq /L	C1 mEq /L	MEq /L	CO ₂	pill	Bilirubia Total = T Direct = D	BUN	Sugar	Blood Galac- tose	Goombe Test	Alk. Phosp. (K.4.)	Proth. Time (secs.)	NOTES AND PROGRESS
June 10 4 p.m.	10,3	21,800	648 Polys	149.7	128,8	8,9	7.7	7.05	D = 2 T = 9	37.1	111.8					Liver function tests normal, Plans proteins - total 7. Alb. 4.9., Glob. 2.1. Urine case, WG mmcp, posttive for bile. No urobilinogen Given IV 1/2 strength X-183, 20) on then distilled water.
June 11 9 a.m.	7.7			144.2	130.5	6.13	7	7.08	D ~ 6 T ~ 11	55.5	111.5	Neg.	Nog.	82.7	40 secs.	Vomited blood & passed blood - stool positive for occult blood- given IV 105 fravert - Vit. K., given, Blood culture done Chloromycetin started. (I.M. 150 mgm. 0H - 12.) X-Ray ab. chest & bones - mag. Blood transfusion 70 cc.
June 12 9 a.m.				136	123.5	4.25	7.16	7.1		28.8						Pheunocoopus is blood culture, Penicillis IV & IM (500,000 units Stat. IV & ORE I.M.) 250 cc. Electro lyts # 2 - ower 24 hours. 250 cc. 10% Travert, Started on Glunome & K on June 13/ors.
June 14	10,6			143.2	109.2		15.3	7.24	D = 3 T = 5	8.2						CSF - 4 cells. Bilirubin stained fluid. Normal protein. Penicillin OH 6. Formula started.
June 16		7,900	32% Polys.													

reducing substances in the urine were presumably from the intravenous glucose. The alkaline phosphatase was 82.7 King-Armstrong units. The spleen tip was palpable and the liver seemed somewhat enlarged. One wondered whether or not the jaundice was the jaundice of sepsis, so blood was taken for culture, and once this was done, chloromycetin was begun. Following this there was definite improvement noted which did not seem to be related especially to the electrolyte therapy, which was mainly 10% Travert. On June 12th the "serum chemistry" had changed slightly for the better, the BUN which had been 55.5 mgm. % the day before was now less than 29 and on this day the report from the laboratory was that pneumococcus was growing in the blood culture. On this basis we added to the therapy high doses of intra-muscular and intravenous penicillin. Two days later, both clinically and biochemically, the child was almost normal. Her respiratory rate was now 20 per minute, her jaundice was disappearing, she was more active and taking oral feedings well. Her stools were normal. During this period two small transfusions of 70 cc.'s each were given so that in spite of the re-hydration the hemoglobin is now 10.6 grams. Of further interest is the fact that although on admission, the child had no temperature and appeared almost to be in shock. following re-hydration there was some elevation of temperature. Very shortly after chloromycetin and later penicillin were given, the temperature came down to normal again and has so remained. We are presenting the baby then as an example of pneumococcal sepsis in an infant, with some liver damage and jaundice, and also some mild kidney damage with casts and white cells in the urine.

Dr. B. Chown: Dr. Grant, since you were the Staff man on the ward, would you comment on this infant and its problems?

Dr. Grant: I have only one or two comments to make, the first is that, although Dr. Holman suggests otherwise, blood had already been taken for culture before I saw the baby, however, I did feel that the spleen was somewhat larger than its size of the day before as indicated by markings on the abdomen, and certainly one got the impression that the child was more tender in that area. It seemed to me that the electrolyte therapy was being well handled and that re-hydration was necessary before taking into account too seriously the blood chemical findings. In retrospect it is easy to think of things that might have been done that would have led to a diagnosis and effective treatment sooner, such as taking blood for culture at the same time as it was being drawn for chemical analysis. Perhaps a stool culture should have been done at the same time-it's conceivable that a child this young might even have had typhoid fever, with jaundice, diarrhea and dehydration and a picture

very much like this (such an infant was presented at a Saturday grand rounds I attended in Minneapolis a month ago). As usual I felt quite unable to deal with the electrolyte situation and asked that Dr. Read might look at the child and suggest any alterations in therapy. He said that the child had "hyperosmolarity" which it certainly had, and acidosis, and agreed that the intravenous therapy being given was good treatment. It has been most satisfying to see the way this baby has improved. because of the efforts of all of us, none of whom alone can take the credit for the diagnosis, except perhaps the bacteriologist, Miss Norris. If Dr. Israels and Dr. Read are both here I would be pleased to listen to their high-level discussion of the electrolyte problem presented by the baby.

Dr. S. Israels: We have been arguing about this for the past two or three days and certainly this is a recognized phenomenon, sometimes with diarrhea there is a loss of water and saving of excessive salt but the explanation of it certainly isn't clear to me. Furthermore, the child didn't have much diarrhea. I understand that two of the papers recently presented at the Pennsylvania Meeting of the Society for Pediatric Research were on hyperelectrolytemia. The instances discussed were mostly with diarrhea although other cases were to be reported, the nature of which, perhaps someone who was at the Meeting can tell us.

Dr. C. Read: I think, as I remember the papers, they didn't dwell on the diagnosis of the underlying conditions, but emphasized more the hyperosmolarity which is not infrequently seen.

Dr. Grant: This child was reported to have been refusing one or two feedings a day and bringing up one or two others for several days before it had the diarrhea which presumably began the day before she was admitted. It was certainly severely dehydrated when it came in, I don't think I have seen for a long time such depression of the anterior fontanelle.

Dr. Grewar: I can't altogether agree with that. I saw the baby when it came in, the picture presented was fascinating right from the start, the baby was a muddy-yellow colour, so the first thing I asked the mother was who the father was and she said he was an Icelander.

Dr. Chown: What race is "muddy-yellow" in appearance?

Dr. Grewar: She was, I think, Anglo-Saxon and if the father were Icelandic there seemed to be no reason for calling this pigmentation a racial characteristic. The history was conflicting, two women were looking after the child, one said that the child was half-starved and had got worse in two days, the other said that the baby had been normal. The most striking thing was the breathing, in a way characteristic of acidotic infants, and I thought possibly it was uremia. I have seen many babies

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breathing like this who have marked dehydration shown by sunken eyes and a loss of tissue turgor, but this baby, although it did have a remarkably sunken fontanelle had fair tissue turgor and the eyes were not sunken. We didn't regard it as a severely dehydrated baby.

Dr. C. Read: Dr. Grewar and I were discussing that point the other afternoon and I wondered if because of this very high osmotic activity in the extra-cellular fluid there wouldn't be a greater intra-cellular dehydration than usual, and this would show up in shrinking of the size of the brain and the increased depression of the fontanelle.

Dr. Holman: Actually the child had been gaining weight quite well from 3½ pounds at birth to over 6 pounds at the time of admission, and the diarrhea began with two loose stools the afternoon of the day it was admitted.

Dr. C. Read: This reminds me of a surgical patient we saw not long ago, who also showed hyperosmolarity. There didn't seem to be adequate cause for the amount of dehydration apparent. There is an experimental explanation I might suggest and that is this, if you give an animal a large amount of desoxycorticosterone, (the sodium and potassium hormone of the adrenal cortex) you can induce a diabetes-insipidus-like state in which the animal retains electrolytes but loses water. Presumably under conditions of stress, some people might react in a similar manner, with the loss of water being by way of the kidneys.

Dr. Holman: The foster mother did say that she thought the baby required more frequent diaper changing for a day or so before coming in.

Dr. B. Chown: I would just like to make one point and it's this, that when you see a baby of this age or younger, who has been well and develops an acute jaundice, whether it is mild or not, (it's usually mild) the first thing to think of is sepsis. The hemolytic process which this child would appear to have been undergoing (it might have been a matter of dilution but not likely) is presumably related to the septicemia. These babies usually have a peculiar wrinkled look. They will recover with antibiotics no matter what you do as far as their fluids are concerned, so long as you give them something by mouth. What goes on in their tissues biochemically I have no idea. Furthermore they are usually afebrile.

Dr. Grewar: We thought of that but there was another complicating feature and that is that the first stool the baby passed following admission to hospital was cream-coloured, almost white, and one of the women looking after him had suggested that he had had dark-coloured skin since birth. Furthermore of course, there was no temperature and although there was a leukocytosis these were over 60% lymphocytes, but I'm told that a baby can respond with lymphocytes to an infection.

Dr. K. Martin: This jaundice is due to hemolysis and not to liver damage?

Dr. Chown: It is thought to be. I suppose there might be a liver factor associated with it.

Dr. Grant: Some of the laboratory investigations suggest some degree of obstruction and liver damage.

Dr. Martin: Is there any particular age in which this commonly occurs?

Dr. Chown: You see it more commonly in the first month than you do in the second, but we've seen them at various ages through the first months of life. Sometimes they have a greater degree of jaundice than was shown by this baby.

Dr. Holman: Another thing supporting the idea of hemolysis is that the child had a 5% reticulocyte count

Dr. Read: Dr. Hoogstraten, is it unusual for a child of two months to have reticulocyte count like that?

Dr. Hoogstraten: No, however the thing that interests me is the recorded length of the prothrombin time (40 seconds on June 11th.)

Dr. Grant: The child has actually been having some blood in the stools even as recently as yesterday, and this might be due to liver malfunction and prothrombin deficiency.

Commentary by Dr. Grewar:

This infant was the subject of pneumococcal septicaemia apparently complicated by hepatotoxic jaundice and a severe metabolic acidosis. The underlying cause for the metabolic acidosis was not altogether apparent and the conflicting history may obscure the occurrence of diarrhea and vomiting. The state of hyperelectrolytaemia and presumed hyperosmolarity which was disclosed might explain the clinical impression that intracellular dehydration was more marked than extracellular.

The exhibition of antibiotics and correction of the electrolyte disturbance using hypotonic intravenous fluids resulted in a dramatic and sustained improvement. The jaundice, however, persisted at the time of her discharge, and was still minimally present at the time of her last review as an outpatient in August of 1954, that is some three months after the onset of her illness.

Case No. 2 — Ward Rounds

"An Infant With Staphylococcal Septicemia and Multiple Lung Abscesses"

Presented by Dr. G. Holman, A-4427.

This two week old infant was admitted to the Children's Hospital on May 30th. Delivery had apparently been normal after a full term pregnancy but about ten days after birth the mother noticed that the baby's abdomen was enlarging and about May 27th the left thigh was notably swollen. She was given some medicine for this by her doctor and the distension temporarily disappeared but by the 27th or 28th of May the abdomen was agair

enlarged. On admission the child was acutely ill with marked abdominal distension and a purulent exudate at the umbilicus with redness around it. The liver edge was not palpable, perhaps because of the distension, but the flat film of the abdomen showed a large liver shadow. A diagnosis of portal venous thrombosis was entertained. Blood, which had been taken for culture in another hospital before admission here, at a time when the baby's temperature was 106°, was found to contain staphylococcus aureus, but unfortunately no sensitivity tests were done. The organism grown from the exudate around the umbilicus also was staphylococcus aureus, which was sensitive to erythromycin and chloramphenicol.

The baby was treated with intravenous erythromycin with very little improvement and possibly a generalized urticarial reaction. She was also given erythromycin orally. Her condition remained much the same, the swelling of the left leg went down temporarily and then increased in size as did the swelling of the abdomen. Her temperature remained elevated and she began having respiratory distress, and on June 7th an X-ray film of the chest suggested the presence of multiple small abscesses in both lung bases. There has been little change since then except that she has perhaps been slightly worse the last two or three days. Her hemoglobin, which was 13.5 grams on admission, is steadily falling until it is now 10.3 grams in spite of the fact that she has received 200 cc.'s of blood since admission. She is now coughing and obviously very weak. The swelling on the left thigh was opened on the 11th of June releasing a large amount of pus. This also is due to staphylococcus aureus

Her progress is well shown by X-ray films which have been taken quite frequently. She developed emphysematous bullae some of which became abscessed, and the most recent chest film taken June 14 shows a large area on the right side which is considered to be an abscess. Dr. Ferguson has seen the child as to the feasibility of surgical treatment, and he felt that this would not yet be advisable. The child was changed to chloromycetin on the 4th of June and there was a temporary improvement with return of temperature to normal for a few days, but this was short lasting. In spite of her serious illness she has been gaining weight.

Dr. Chown: Dr. Israels, this is your patient I believe.

Dr. S. Israels: I see Dr. DePape here, he is somewhat of an expert on staphylococcus infections in children. This baby is an example of the state to which a child with such infections can come. The story is just as Dr. Holman has outlined it and we're looking for help as to what further we might do especially the best means of dealing with the multiple abscesses in the chest. Anyone who is

doing general medicine or Pediatrics in the city sees infants with pustules, and this seems to be increasing in frequency. This is what can happen to some of them.

Dr. Chown: This isn't the experience in Winnipeg only, is it, Dr. DePape, you have had considerable experience starting in St. Boniface and then continuing in Montreal.

Dr. DePape: I think the condition follows me around wherever I go. The first thing that strikes one about this child is that it must have a certain amount of symbiosis between the staphylococcus and its body or it would have been dead long ago One is always hopeful, when they carry on for any length of time like this, that there may be eventual recovery. The second point is-what is one's antibiotic regime to be? In this regard we are all very much at a loss, in vitro sensitivities may or may not be helpful since one commonly finds that by using an antibiotic to which the organism is, in vitro, resistant, you may get a satisfactory response and vice versa. In one hospital in Montreal they have used tremendous doses of chloromycetin intravenously (about 150 to 200 mgm, per kilo) and feel that the results have justified the therapy. On the other hand Rubin in Buffalo has used penicillin and streptomycin in combination (5 or 6 million units of penicillin a day). The third thing is that this baby should be carefully isolated from all other infectious cases since such children may carry on for a long time reasonably satisfactorily and then take a turn for the worse. When one studies the environment we find that someone in attendance or some other patient close by has had a respiratory infection, which one cannot prove has been responsible for the deterioration but one finds it so commonly that it does seem to be im-

Dr. Holman: Interestingly enough, although the initial blood culture was positive, and there has been no growth on subsequent cultures, the erythromycin did not keep her temperature down.

Dr. Chown: The lesion in the thigh was a soft

Dr. S. Israels: Yes, the bone was X-rayed twice and nothing abnormal has been found in it. When I first saw this baby I felt that this was probably an osteomyelitis and septicemia but the subsequent course makes it seem unlikely.

Dr. Chown: At the recent Canadian Paediatric Society Meeting a paper was given on this subject from Ottawa, and it was noted that they had had the same sort of experience there. Dr. Alan Ross discussed the paper and pointed out that there had been an increasing incidence lately in Montreal. After having gone down to a very low level last year the incidence is increasing again this year. No one offered more than has been suggested here, as far as treatment was concerned.

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Dr. Israels: Has anyone any information about the incidence of this condition in children who have been born at home?

Dr. DePape: I think the general experience has been that the incidence is higher in infants born in hospitals.

Dr. Martin: The usual experience is that although one sees nothing like this in the newborn period with the child still in hospital, trouble develops about two or three weeks afterwards. We have had three recently with multiple abscesses.

Dr. Israels: Was there anything said about the use of staphylococcus toxoid at this meeting, Dr. Chown?

Dr. Chown: No. there wasn't.

Dr. Israels: There was a report in the Lancet recently recommending that staphylococcus toxoid should be given to the mother before the child was born. Do you think there should be any attempts made surgically to drain these abscesses? Dr. William Bowman told me recently that in Newcastle they were putting polyethylene tubes down into the abscesses and draining them that way.

Dr. DePape: I once put a needle into such an abscess and drained it and injected aureomycin right into the abscess cavity with an excellent result, but I think this baby would have had the same result with aureomycin systemically with the organism being sensitive to the drug. My feeling is that one should leave this baby alone until the abscess ruptures into the pleural cavity, and drain it then. A lot of the shadow that one sees in the chest films may be due to edema around the abscess

Dr. S. Israels: Has there not been some recent bacteriological work on the reversal of penicillin resistance to sensitivity, following the use of other antibiotics? For instance if you have an organism that is penicillin-resistant and if you grow it in some concentration of aureomycin it becomes penicillin-sensitive again. Is this of importance clinically or not?

Dr. C. Read: It certainly has been reported lately that an increasing number of staphylococcal infections are responding now to penicillin again.

Dr. Holman: But that wouldn't be the case with so-called "hospital staphylococci."

Dr. Brotman: Has the sequence of events been established here, Dr. Chown, that is, initially by way of the umbilicus?

Dr. S. Israels: Initially the baby had bilateral edema of the lower extremities and we thought it might have some involvement of the inferior vena cava. As a matter of fact you could feel the thrombosis in the femoral vessels.

Dr. Chown: Are you considering then, Dr. Israels, that maybe you should change your anti-

Dr. Israels: Since the wound in the thigh is still discharging, I think we should culture that again

and test for sensitivity, see if there is any change, and concentrate on the antibiotic that seems most effective in vitro.

Dr. Brotman: Is there any value in using the serum of an individual recovered from a staphylogogral infection?

Dr. B. Chown: I don't know of any.

Dr. Grewar: Gamma globulin of course might be tried.

Dr. Chown: Has this mother any infection?

Dr. Israels: Not that we know of.

Follow up:

This child subsequently died (July 10th) and was found to have multiple abscesses of liver and lung and osteomyelitis of the humeri and femora. (S.I.)

Children's Hospital Appointments

The Board of Directors of the Winnipeg Children's Hospital announce the appointment of Dr. Colin C. Ferguson to the position of Surgeon-in-Chief; Dr. Harry Medovy, Pediatrician-in-Chief; and Dr. C. W. Clark as Surgeon to the Children's Hospital.

Dr. Ferguson was born in Winnipeg and attended Ravenscourt School. His medical course was taken at the University of Manitoba. After completing a year of interneship at the Winnipeg General Hospital, Dr. Ferguson graduated from the University in January of 1945. Dr. Ferguson then joined the Royal Canadian Navy as a Medical Officer, and served in Halifax and Overseas for a period of one and a half years. On discharge from the Canadian Navy, Dr. Ferguson took post-graduate work in surgery at McGill University in Montreal. In 1948 he spent a year at the University of Pennsylvania in Philadelphia doing research work, and then in 1950 went to Boston Children's Hospital for special surgical training in diseases of infants and children. Dr. Ferguson spent four years in Boston and during his final year there, he was Chief-Resident-in-Surgery and was appointed a Teaching Fellow in Surgery at Harvard Medical School. In July, 1953. Dr. Ferguson returned to Winnipeg and was appointed Professor and Chairman of the Department of Surgery at the University of Manitoba. Dr. Ferguson is also on the Surgical Staffs of St. Boniface Hospital, the Winnipeg General Hospital and Deer Lodge Veterans' Hospital.

Dr. Medovy attended Winnipeg Public and High Schools and graduated in Arts from the University of Manitoba in 1923, and in Medicine in 1928. He was Senior Resident at the Winnipeg Children's Hospital in 1928. His post-graduate studies were taken at the University of Pennsylvania, and he joined the staff of the Children's Hospital in 1930 as Director of the Diabetic Clinic, joined the Royal Canadian Army Medical Corps in 1942 and was discharged in 1945. Appointed Pediatrist to the Winnipeg General Hospital in 1951, in 1952 he became Associate Professor of Pediatrics and in

September, 1954, he was appointed Professor of Pediatrics and Chairman of the Department on the retirement of Dr. H. B. Chown.

Dr. Clark was born in Oakville, Manitoba, and was raised and attended Grade and High School in Portage la Prairie. He attended the University of Manitoba and graduated in Medicine in 1931. He interned for four years at the Winnipeg General Hospital, being a Resident there in Surgery for two years, did post-graduate work in England and Scotland and obtained his F.R.C.S. in Edinburgh. He is a fellow of the Royal College of Surgeons of Canada and a Fellow of the American College of Surgeons.

During World War II he served overseas in the rank of Lieut. Colonel, with the Royal Canadian Army Medical Corps as Surgeon. At present he is Associate Surgeon at the Winnipeg General Hospital; Consultant in Surgery at Deer Lodge Veterans' Hospital and Assistant Professor of Surgery, University of Manitoba.

Medical History

Fulfilling a Promise Made to the

On a lovely September afternoon I was sitting in my room in the old Richmond Hospital in Dublin, thinking of more attractive ways of spending the day than waiting for emergencies. I did not have to wait long. In rushed a newly-joined interne named Gogarty. A good many of you may have read his novels for he is now a well-known author. He is also a specialist in a branch of surgery, and a senator in the Dail. I do not hesitate to give his name, for Gogarty has lampooned many leading members of our profession in Dublin, and told a story about the domestic affairs of Sir Thornley Stoker (under whom I worked)—which a gentleman would not have done.

His greeting to me was, "My God, I've poisoned a man!"

"How did you do that?" I asked with the nonchalance which characterises many internes immune to crises.

"I gave him an ounce of Friar's Balsam instead of Black Draught." (The latter is a mixture compounded of various drugs euphemistically described as a brisk purgative. It was given as a routine measure to most injured drunks after their wounds had been attended to, and it mitigated the hangover on recovery).

"Good for you! You're just the man we wanted!" was my rather surprising reply. "Send a messenger to get all available internes to the out-patient room."

There had been a discussion at dinner one evening on apomorphine, a fairly recent addition to the list of emetics, and the consensus of opinion was that no injection could act in a matter of seconds. Here was the opportunity to settle the question.

The patient was very drunk, and I didn't think that Friar's Balsam was poisonous when mixed with a large quantity of alcohol. The injection was prepared, and one of the onlookers had a stop watch. Exactly thirty-four seconds after I had withdrawn the needle, the patient was bringing up his "immortal soul" pickled in alcohol. Then one of the internes said that he had no experience in the use of the stomach pump; might he pass the tube? This was done with little difficulty. and the patient was put to sleep on a couch. Waking after two hours and quite sober, he thanked us politely for what we had done for him-little did he know what it was-said he had a queer taste in his mouth and was hungry, and bade us good-bye.

E. S. Moorhead.

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Editorial

Guest Editorial by S. Vaisrub, M.D., M.R.C.P. (Lond.), F.R.C.P. (Can.), F.A.C.P.

Belated Anniversary

The time honoured adage, "better late than never," has, at best, a limited applicability. It offers little consolation to a traveller who on arriving at the airport a few minutes late sees his plane take off without him. It gives no solace to the student, to whom the right answer comes suddenly, as a wave of inspiration, only a few minutes after he has handed in his paper. Nor does it cheer the debater, who missed his chance for a brilliant repartee by a matter of seconds. Like the man on the flying trapeze reaching for the bar these unfortunates would have been much wiser to adopt the motto of "now or never."

There are, however, rare occasions which offer the slogan of "better late than never" a range of usefulness. When, for instance, uttered as an apologetic remark accompanied by a sheepish grin it may save the day for a groom arriving late for the wedding ceremony. It will often help to smooth over a belated birthday gift. May it, then, not be summoned to act as a "face saving" device for an editorial, commemorating an important fiftieth anniversary a year too late? Surely the grim alternative of waiting another forty-nine years for the hundredth anniversary would appeal only to the young with their redundant life expectancies. Rather the embarrassment than the long wait, particularly if the former is shared by as august a body as the American Heart Association, which has commemorated the very same event only three months ago. The anniversary, of course, is that of the String Galvanometer, first announced to the world by Willem Einthoven in 1903 in his historic paper titled: "The Galvanometric Registration of the Human Electrocardiogram, Likewise A Review of the Use of the Capillary - Electrometer in Physiology." Since that date the Electrocardiograph has risen rapidly to a position of eminence among diagnostic tools. Its uses have become known not only to the medical profession, but to the public at large. Not so well known, as often is the case, is the man behind the machine. The father of electrocardiography, as yet undiscovered by Hollywood, is less well known. A few words about him would not be amiss.

Willem Einthoven was born in May, 1860, in Java, but spent most of his life in Holland. He studied medicine at the University of Utrecht, where his scholastic proficiency and interest in physical sciences were noted and appreciated by fellow students as well as teachers. The high esteem, in which he was held, is attested by the fact that at the age of twenty-six, a year after the receipt of his Doctor's degree, Einthoven was called to the chair of physiology and histology at the

University of Leyden, a post never before held by a younger or abler man.

The early researches of Einthoven dealt with a wide variety of subjects. Gradually, however, his interests centred upon the study of electrical phenomena which accompany the heart beat, a study which led him to the perfection of the String Galvanometer, and the development of the technical as well as conceptual basis of electrocardiography. His first paper on the subject, published in 1903 marked one of the most important milestones in the history of Cardiography. The universal appreciation of the importance of this achievement was expressed in the award to Dr. Einthoven of the Nobel prize in 1924.

Every great discovery has its roots in history. The electrocardiograph is no exception. In tracing its evolution one notes a series of steps. At the end of the eighteenth century. Luigi Galvani. professor of Anatomy at the University of Bologna. studied contraction of muscles in response to various methods of electrical stimulation. In 1842 Carlo Mattenele recorded observations on electrical conduction in nerve and muscle. In 1878 John B. Sanderson and F. J. M. Page in England were first to record by means of the capillary electrometer the current produced by the beat of the exposed heart of a frog. In 1887 Augustus D. Waller demonstrated the technique of application of external leads for the study of electrical phenomena of cardiac action. In 1903 Einthoven perfected the String Galvanometer, the invention of Johannes S. C. Schweigger (1779-1857) of the University of Halle and founded modern electrocardiography.

The above impressive list of events anteceding Einthoven's contribution does not detract from its importance any more than the work of the pioneers in the field of Diabetes does from that of Banting's It merely serves to illustrate that discoveries are not isolated islands in time and space. Nor will Einthoven be regarded only as the discoverer of the electrocardiograph and its technical application. He will be also remembered as a creator of concepts fundamental to the understanding of the electrophysiology of the heart, the concept of the Einthoven triangle, the principle of the dipole, etc. . . . , concepts which form the basis of present day electrocardiography, and will, perhaps, be applicable as well to other techniques which the future may have in store for us, as they already are to some extent to that of Vector-cardiography.

Willem Einthoven taught and worked until his death in 1927. His memory will not remain uncherished.

Early Resolutions

The early bird gets the worm. In the process, of course, it loses its bird's eye view. This probably does not worry the bird too much; for what good is a good view on an empty stomach? This somewhat irrelevant observation leads us to another one, namely that even though this is **THE** month for taking bird's eye views of the departing year, it is much more fun to indulge in the game of picking the early worms of the new. True, it is a bit early to start making resolutions for the coming year; but is it too early to start planning them? "Any time is planning time" to paraphrase the old saving.

At this point the reader may think the writer to be a queer bird (there appears to be altogether too many birds in this flighty editorial), for, surely, everyone knows that to make New Year's resolutions is to indulge in an act of futility. Aren't these resolutions made to be broken? Isn't it common knowledge, a universal tacit assumption, that they are but creatures of the moment, salves to the conscience, election promises of the ego to the super ego?

Before accepting with philosophic resignation this pessimistic view, before taking for granted the dissolution of our good intentions and the impossibility of their realization, before declaring the whole thing a total loss, let us examine the facts. Let us arraign the resolutions and subject them to close scrutiny.

First come the good intentions that never live to see the light of day. Vague aspirations to a more meaningful life, and even less well defined yearnings for the acquisition of strength, beauty and wisdom, die in embryo ere they get the chance to become clearly formulated into full fledged resolutions. Then come the more specific, run of the mill, resolutions of abstinence from tobacco, alcohol etc. . . . These, regretfully, do not survive the first encounter with a friendly hand, whether pouring or offering. The good intention of dieting, likewise, meets its Waterloo at the first feast in the disguise of a "snack" prepared by the little woman. The honorable resolve to be a model husband, and treat your wife courteously, if not chivalrously, vanishes with the first cup of stale coffee or burned toast. The commendable intention to be an exemplary father and treat your child with patience and forbearance dies a painful death with the year's first tantrum. The pious wish to "love thy neighbour" may come to grief with an important commandment, should the neighbour happen to be a member of the opposite sex. The firm determination to catch up with your reading, and correspondence, to organize your chaotic way of life, to do away with slovenliness, sloth, and disorder, and replace them with their opposite numbers, dies slowly by a process of attrition. The roving eye, the covetous thought, the mischievous

act, break through the thin ice of good resolutions without too much difficulty.

The high casualty rate in this "resolutionary" struggle is shared alike by physician and layman. But what about the "specific" medical resolutions made by doctors only? Do they fare any better? The "historical" pledge, for example. The one about taking a complete and exhaustive history, and doing a thorough physical on each and every patient. Did it last, or did it flicker out when the waiting room got crowded, the hour late, and the friendly dinner at home began to beckon to your mind's eve? (or is it palate?). And that other one. to treat the patient as a whole human being and not just a case, to use the sympathetic, comprehensive, "holistic" approach? What happened to it? Did it succumb when you found that your fatigue is no match for the indefatigability of the hypochondriac, who inundates you with his symptoms? It probably did. And the one about treating emissaries of drug houses with gentle and polite attentiveness. Did it fold up after the lengthy. solemn tirade about the virtues of the green capsule, which is so much like the vellow one, vet so different? You shrug your shoulders.

Should the whole thing, then, be written off as a delinquent debt? Should we admit total defeat? Not at all! Out of the plethora of pledges emerge a few that survive the test of time. These are the modest, meek, unassuming resolutions which do not impose too much on human nature. and attempt no radical changes. These resolutions usually concern themselves with group activities in administrative, organizational or educational spheres. As an example may serve the excellent resolution to attend as many meetings of the various medical societies, scientific conventions and conferences, clinical luncheons, hospital rounds, refresher courses, and other facilities for post graduate education as are available locally. This resolution is often carried out successfully, despite the effort and loss of time involved, partly because these pursuits are replete with interest, and partly because of the stimulus afforded through contact with professional colleagues. A refresher course helps to refresh one's knowledge, as well as renew old friendships, and stike up new ones. A clinical luncheon nourishes the mind as well as the body. (It is claimed by experts that an adequate state of nutrition can be maintained by a steady clinical luncheon goer without him having to resort to other sources of food.) Hospital ward rounds are always richly rewarding.

Let us, then, make more resolutions (of the right kind!) and see to it that they are well executed (in the right sense). As the old saying goes: "a kiss makes less noise than a cannon, but its echo lasts longer". Some New Year's resolutions may outlive the noise of the festivities.

S. Vaisrub.

Manitoba's Medical Men

XI. Sickness and Accident Insurance

One of the problems presented to the Executive of the Manitoba Medical Association was in regard to the degree of liability of insurance companies for medical bills. The question was asked whether a company could be forced to pay the whole of a medical fee of an insured person or whether the doctor was forced to accept a lower fee.

Many people insure themselves up to a limited amount, this amount not necessarily corresponding to the total medical fee. This insurance is a contract strictly between the patient and the insurance company. Therefore, the doctor is not a party to this contract and has no obligations either to the insurance company or to the patient insofar as the contract is concerned. In some cases the fee allowed by the insurance company for a medical condition is the amount charged by the doctor. In these cases the insurance company's fee is less, and in these the doctor has the alternative of accepting the reduced fee, or of collecting the difference from the patient. As a matter of policy, to establish good public relations, many doctors accept the fee offered by the insurance company. This does not mean that the doctor has to accept this fee, nor does it mean that the company has any obligation to pay the fee submitted by the doctor.

The medical profession has for a number of years encouraged people to protect themselves against expenses for illness and accident. Here in this province, the Manitoba Medical Service was started by the doctors to assist people to get protection at cost. As a matter of fact, the subscribers have been getting this protection for less than cost since the start of the plan, the difference being absorbed by the doctors. At present the doctors get 75% of the medical fees, but at one time they went as low as 55%. Many patients are unaware of the fact that the doctors do not get the full fee because they receive receipts from the Manitoba Medical Service for income tax purposes for the whole amount of the assessed fee

A peculiar condition arises in cases where patients have many insurance policies in addition to having a Manitoba Medical Service policy. A person has a right to insure himself in any number of companies against sickness and accident. One patient had his operation paid for by the Manitoba Medical Service and then had the surgeon sign four insurance company forms. All medical fees collected by this patient from these companies were kept by the patient, and thus he received more than the doctor. Insurance companies may pro-rate medical bills among themselves, but in doing so they have to exclude the Manitoba Service because it does not come within the mean-

ing of the Act. It was on this basis that the Manitoba Medical Service was the only one of the five pre-paid medical plans carried by the patient that paid the doctor.

Inasmuch as it is the policy of the Canadian Medical Association to encourage pre-paid medical care either through the plans sponsored by the doctors, or through private companies, it would be unwise to attempt to make any sudden and radical changes in respect to any of the existing plans. A careful study of all the factors involved, is therefore essential before any action is taken in respect to the whole problem of pre-paid medical

L. A. Sigurdson, M.D.

Ancesthetists' Meeting Preliminary Notice

The Registrar,
College of Physicians and Surgeons,
Winnipeg, Manitoba.
Dear Sir:

Western Canadian Anaesthetists' Society meeting will be held in Regina, Saskatchewan, early in 1955.

Every effort will be made to hold this simultaneously with the Western Surgical Meeting.

Doctors interested in Anaesthesia who have papers they would like to present, please write Dr. J. E. McCutcheon, P.O. Box 34, Regina, Saskatchewan. Papers presented at the meeting will be printed in "The Canadian Anaesthetists' Society's Journal."

Editor, Manitoba Medical Review

Applications are invited for the position of Editor, Manitoba Medical Review. Annual remuneration \$1500.00. Apply by December 31st, 1954, stating qualifications to Manitoba Medical Association, 604 Medical Arts Building, 404 Graham Avenue, Winnipeg 1, Manitoba.

Obituary

Dr. David Williamson Morrison

Dr. David William Morrison, 76, died on Sept. 7. Born at Melbourne, Que., he graduated in medicine from Bishop's College, McGill University, in 1903. For a time he was medical superintendent of the western division of Montreal General hospital before taking post graduate study in Edinburgh and Glasgow. He came to Winnipeg in 1910 and practised there continuously. In the First World War he served as a medical officer in Canada and overseas and in the second he was medical examiner for the R.C.A.F. He was a life member of the Winnipeg Medical Society. His widow, three sons, one of whom, Dr. James Morrison, Fort Garry, was associated in practice with his father, a daughter and four grandchildren, survive him.



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1. Rossett, N. E., and others: Ann. Int. Med. 36:98 (Jan.) 1052 Θ

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Social News

Reported by K. Borthwick-Leslie, M.D.



Merry Christmas, or rather a Happy Christmas and a Merry New Hear to All



Sincere congratulations to Dr. H. Yonker on his 81st birthday, October 25th. A group of his friends and admirers held a happy reunion party in his honor on that date. Dr. Yonker, a graduate of Rush University, began his medical career in Manitoba in 1905 and has been in active successful practise since. I understand that one of his successful projects, was the presentation to the world, of Tony Gowron. Best wishes for the festive season and all of 1955, sir.

90

Dr. and Mrs. R. D. Campbell, of Grand Forks, N.D., were guests at the Fort Garry Hotel, for the celebration of their 58th wedding anniversary. Dr. Campbell is an 1893 graduate of our Manitoba Medical College. Dr. Campbell's family in Winnipeg, including Dr. A. M. Campbell, with two more brothers and sisters, held a celebration wedding dinner at the Fort Garry, in honor of the occasion.

89 W

Dr. and Mrs. John D. Stevenson, announce the birth, in Vancouver, of their son, John Milton, a brother for Bruce, Joan and Barbara.

Dr. Gordon C. Sisler has been appointed chairman of the newly established Department of Psychiatry in the Faculty of Medicine, University of Manitoba. Dr. Sisler was previously Clinical Director of the In Patients Department of the Psychopathic Hospital.

890

Dr. F. W. Jackson, Deputy Health Minister for Manitoba, has been appointed director of Health Services, Ottawa. He has been with the Department in Ottawa since 1948.

SO

Dr. and Mrs. W. J. Riddle, Melville, Sask., announce the birth of William Gordon, October 28th, in Regina, Sask.

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Congratulations to Doctors Walter McCord, Gordon Fahrni, Colin Ferguson (Professor of Surgery), Harold Evans (Brandon, Man.), who received their Fellowship in the American College of Surgeons at a recent meeting in Atlantic City, N.J.







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Winnipeg Medical Society

Canadian Doctors Who Have Distinguished Themselves In Other Fields*

David Swartz, F.R.CS. (Edin. & C.)

There are members of every calling who occupy their leisure moments in the exploration of other fields and the pursuit of other vocations. In this regard the medical profession need not be ashamed. for its contribution to culture and education has at least equalled or may have surpassed that of its sister professions. It is to be expected, of the many medical men who possess the wisdom to cultivate a hobby, some will attain a preeminent position in its development and application. In numerous cases the medical man has been gifted with special talents in addition to those required for medical practice. Personal inclination or perhaps force of circumstances has led him to diverge from his original vocation. It is generally accepted that the doctor with a well rounded medical education has become so acquainted with the allied arts and sciences, that it would be easy for him to obtain a special interest in one of them.

Of all non medical pursuits, literature has proved the most susceptible. The profession of medicine peculiarly fits the physician for the profession of letters and the transition here may be considered natural. Literature appeals to the medical mind, for writing and healing require much the same quality of thought. Both doctor and writer are vitally concerned with psychological details of personality, emotional states and behaviour. Dr. Francis Brett Young, himself a poet said, "If ever a parent were to ask my advice as to what to do with a son who wanted to be a man of letters, my answer would be to give him a doctor's education".

Through the centuries many medical men have become great literary figures. There is probably no medical man in history who stood equally high in medicine and literature as Oliver Wendell Holmes, 1809-1894. It cannot be definitely estimated whether he was a greater writer and poet, or a greater physician. He was a brilliant figure in both professions.

Silas Weir Mitchell, 1829-1914, one of America's greatest physicians, entered the literary field almost instinctively. The creator of Sherlock Holmes, Sir Arthur Conan Doyle, 1859-1930, specialized in ophthalmology. As he put it, he gave up detection of errors of refraction for detection of errors of crime. John Brown, 1810-1882, best known for his short story entitled "Rab and His Friends", enjoyed an extensive medical practice in Edinburgh

in the mid 19th century. He indeed saw beauty in the faces of the poor.

Among other well known literary figures in the medical profession we find Sir Thomas Brown. 1605-1682, author of Religio Medici: Axel Munthe, 1857-1949, "The Story of San Michele": François Rabelais, 1495-1553, "Heroic Deeds and Savings of Gargantua and his Son Pantagruel": John Arbuthnot, 1665-1735, who coined the expression "John Bull"; Tobias George Smollett, 1721-1771, "Adventures of Perigrine Pickle"; Eugene Sue, 1804-1857, "The Mysteries of Paris" and "The Wandering Jew"; Anton Checkhov, 1860-1904, "The Cherry Orchard": Victor Heiser, 1873-"An American Doctor's Odyssey': Arthur Schnitzler, 1862-1931. "Flight Into Darkness", and Warwick Deeping, 1878-1950, "Sorrell and Son." Moses Maimonides. 1135-1204, a foremost intellectual giant of the 12th century was a poet, philosopher, author, rabbi, and physician. Living medical authors include Somerset Maugham, and A. J. Cronin.

In the early days poetry was considered a better medium for teaching than prose. This is probably why so many fathers of medicine set down in rhyme their precepts and philosophies. They believed that great truths should have poetic form.

"The mouth it inflames and makes cold from within, The gums dry and wrinkled, are parched like the skin; The rough tongue feels harsher, the neck muscles grip, He soon cannot swallow, foam runs from his lib."

Nicander on Lead Poisoning.

When medical poets are discussed the name of John Keats, 1795-1821, is always mentioned first. He was one of the greatest of medical poets. Oliver Goldsmith, 1728-1774, poet, dramatist, novelist and physician, was one of the finest of English writers. Robert Bridges, 1844-1930, had the distinction of becoming poet laureate of England. Other physician poets of note were Edward Jenner, 1749-1823: Johann Wolfgang Goethe, 1749-1832; Von Schiller, 1759-1805; Sir William Blizzard, 1743-1835; and Von Haller, 1708-1777, William Carlos Williams is a leading living American poet. Baron Von Feuchtersleben, 1806-1849, of Vienna, took up poetry to ease the pangs of poverty. He had numerous patients, but owing to his noble ancestry, was socially prohibited from billing them. His patients were afraid of insulting him by paying the customary fee. He is known for the poem "It is Ordained by God's Decree', later set to music by Mendelssohn.

The professon of medicine and art have always been inherently associated. The primitive practitioner of medicine developed his powers of observation most effectively by drawing, and fully ex-

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pressed himself through the medium of art. Pieter Camper, 1722-1789, and Sir Francis Seymour Haden, 1818-1910, were the first physician artists to get away from purely medical subjects. At the present time it has been said that the medical profession produces more amateur artists than any other group.

In the field of music, there is Borodin, 1833-1887, the great Russian composer, whose untimely death left the unfinished opera "Prince Igor", subsequently completed by his friends Rimsky-Korsakov and Glazunov.

Albert Schweitzer, 1875- had been acclaimed an organist of note and a foremost interpreter of the works of Bach. Berlioz of France, best known for his composition "The Damnation of Faust", never completed his medical course.

Many medical men have attained eminence in the field of politics. The British House of Commons at present has 10 physician members, and governments of practically all the civilized world have good medical representation. Two prominent physicians who lived in recent times and became great political leaders, were Sun Yat Sen, 1866-1925, of China, and George Clemenceau, 1841-1919, the "Tiger" of France.

Amongst explorers, there are such well known figures as David Livingstone, 1813-1873; Mungo Park, 1771-1806; John Rae, 1813-1893; Edward Adrian Wilson, 1872-1912; Alexander F. R. Woollaston, 1875-1930, and Sir John Richardson, 1787-1865.

Physicians have become great scientists, biographers, and inventors. In fact it is difficult to mention a field in which some medical man has not played a prominent part.

With these introductory remarks, I would now like to go on to the main theme of this paper—the part played by Canadian doctors in other fields of endeavour.

Among medical litterateurs, I would first like to talk about Sir William Osler, 1849-1919. The spiritual uplift that he gave to the profession of medicine is well known to all of us, but future generations will also know him for his historical, biographical and literary writings. He was born at Bondhead, Ontario, and entered the Toronto School of Medicine in 1868. He transferred to Mc-Gill University in 1870, and graduated there in 1872. In 1889, he was elected to the chair of medicine in Johns Hopkins University. He was a prolific writer and a bibliography in the Johns Hopkins Bulletin which celebrated his 70th birthday contains 730 titles of books and articles written by him in the 49 years from 1870-1919. Of his thoroughly delightful essays, the most popular seems to be the "Student Life". In "Aequanimitas and Other Addresses", Osler gives the ideals particularly appealing to medical men but equally applicable to all mankind. "An Alabama Student and Other Biographical Essays" is favourite reading for many. Other essays such as "Science and Immortality", "The Evolution of Medicine", and "A Way of Life", show a wealth of literary flavour. Few of Osler's many honours were more appreciated than his election as president of the British Classical Association. In this capacity he gave a remarkable address at Oxford in May 1919 on "The Old Humanities and the New Science". The Bibliotheca Osleriana, at McGill University,



Sir William Osler

in its beauty, scope and wealth of detail constitutes a wonderful memorial to Sir William Osler.



Sir Andrew MacPhail

Sir Andrew MccPhail, 1864-1938, was favorably known for his essays and literary criticisms. He was born in Orwell, Prince Edward Island, and graduated at McGill in 1891. He became professor of the History of Medicine at McGill in 1907. Among his writings are "Essays in Puritanism", 1905, "Essays in Politics", "Essays in Fallacy", "The Book of Sorrow", 1916, and "The Bible in Scotland", 1931. He wrote the official history of

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Canada's Medical Services in World War One. He also wrote the biography of John McCrae, of whom I shall speak shortly. He was the first editor of the Canadian Medical Association Journal which came into being in 1910 and it was to a great measure through his efforts that the Journal was founded. In 1930, the Royal Society of Canada awarded Sir Andrew the Lorne Pierce Medal for achievement of conspicuous merit in literature.



William Dunlop

William Dunlop, 1792-1848, "The Tiger of Goderich". William Dunlop was born in Greenock, Scot-



Alexander Jardine Hunter

land. Shortly after his graduation in medicine he became assistant surgeon in the 89th regiment on the Niagara frontier during the campaign of 1814. Following the treaty of Ghent, he went with his regiment to India where he mixed journalism with his military duties and wrote articles in various magazines supporting the East India Company. He received the nick name "Tiger", not from any resemblance in appearance or temperament to the

king of cats, rather through his exploits in clearing the island of Saugar in the Ganges of an incredible number of man eating tigers. He settled in Canada in 1826, in the service of the Canada Company, where he continued his literary interest. He was a long time contributor to Blackwood's Magazine under the pseudonym of Colin Ballantyne. R.N. Among other works he wrote the "Autobiography of a Rat", contributed to the "Canadian Literary Magazine", and in 1836 founded the city of Toronto Literary Club before which he lectured on various subjects of interest. Men are often remembered by some phrase or catchword they have invented rather than their more substantial achievements, and so it was with Dunlop. He made a most remarkable but eccentric last will and testament by which he is remembered rather than the great things that he accomplished.

Alexander Jardine Hunter, 1868-1940. Dr. Hunter devoted the greater part of his life to missionary, medical and educational work among the Ukrainian settlers of the Teulon district in Manitoba. He established his mission at Teulon in 1902 and in a short while had built a hospital, a boys' residence school and a girls' residence school. Desiring to acquaint Anglo-Saxons with Ukrainian Literature, in 1902 Dr. Hunter published a profusely illustrated book "The Kobiar of the Ukraine". which is a skillful verse translation with very appropriate comments of select poems of the immortal Ukrainian poet Taras Shevchenko. In 1929 he published "A Friendly Adventure", relating the story of the mission at Teulon, giving an account of the chief religious movements among the Ukrainians. He also contributed many articles on the Ukrainian people to Canadian newspapers and magazines.

Phillipe Panneton 1895writes under the pseudonym of Ringuet, his mother's name. He was a member of the medical faculty, University of Montreal, but now devotes his entire time to literature. His first novel entitled "Trente Arpents" (1938) is a realistic story of the hard life on a Quebec farm. This was translated into English under the title "Thirty Acres", and became a hit in Montreal. In quick succession, Dr. Panneton wrote three more books, each a creditable success. Like most of the other new writers, he broke away from the traditional imitation of the French classics and wrote realistically of the present day French Canadian life. A recent novel entitled "Le Poids Du Jour" has been an unqualified success and is now in its fourth edition.

Other medical litterateurs include Arthur Vallée, 1883-1939, of Quebec, biographer of Michel Sarrazin; Wilder Penfield, 1891- of Montreal, author of "No Other Gods"; James Algie of Alton, Ontario, "House of Glass"; Lloyd Stevenson, Banting's biographer; B. S. Cornell of Toronto, "Re-

naissance" (1922) and "Lantern Marsh" (1923); W. J. Fischer, Waterloo, Ontario, "The Child Of Destiny" (1909); and our own John C. Hossack with whose writings we are all acquainted.

Poetry

John McCrae 1872-1918. One of the best known and best beloved of Canadian Physician poets was Dr. John McCrae. He was born in Guelph, Ontario, and graduated in science and medicine at the Uni-



John McCrae



W. H. Drummond

versity of Toronto in 1898. He was a brother of Thos. McCrae who was associated with Sir William Osler and co-author with the latter in his magnificent medical classic "The Principles and Practice of Medicine". He served in France during World War I, and was about to receive the signal honor of appointment as consulting physician to the British Armies in France, when he died of pneumonia in 1918. It is of course his beautiful and inspiring "In Flanders Fields" which chiefly brings

him forward as outstanding in the world of poetry. Soon after his death, his editor and biographer, Sir Andrew McPhail, selected a number of McCrae's poems and published them under the title "In Flanders Fields and Other Poems". "In Flanders Fields" first appeared anonymously in Punch, December 8, 1915. It is stated that Sir Andrew McPhail recognized it at once and wrote John McCrae accusing him of its authorship. John McCrae was also known for his association with Professor Adami as co-author of "A Textbook of Pathology". There is a measure of local pride in Dr. McCrae because he was an uncle of Dr. John M. Kilgour of this city.

W. H. Drummond, 1854-1907, the poet of the habitant, was born in Ireland in 1854. While he was still a boy, the family emigrated to Canada. He graduated in medicine at Bishop's College, Montreal, in 1884. It was in a small village near Montreal that he first observed the speech and customs of the habitant, whom, with the kindliest intent he so faithfully portrayed. "The Habitant and Other French-Canadian Poems" was published in 1898. and its popularity was such as to bring him fame. His verses were written in the mixed French and English patois of the province of Quebec. Among his best known pieces are the "Wreck of Julie Plante", "The Papineau Gun", and "Le Vieux-Temps". Drummond found a place for the French Canadian native in literature. He depicted the ordinary attitude of those modest and lowly people, because he saw the streak of beauty which ran through the pathos and dull uniformity of their philosophy and way of living. Drummond did for Quebec what Robert Burns had done for Scotland. Among his notable creations were "Little Bateese". "Josette Couture", "Joe Boucher", "Doctor Hilaire", "Maxine Labelle", and "Dr. Fizet".

Sigurour Julius Johannesson, 1868-, poet and journalist. Dr. Johannesson was born in Iceland and graduated in medicine in Chicago in 1907. Following several years of country practice in Icelandic communities of Western Canada, he moved to Winnipeg and practiced medicine until his recent retirement. Future generations will remember Dr. Johannesson as an eminent Icelandic language poet and journalist. Dr. Johannesson published his first book of poems in Winnipeg in 1900, a second volume in 1903, and a third in Reykjavik in 1910. His last selections were published in Iceland in 1950. Many of his poems were expressly written for children and are known by practically every child in Iceland and the young ones here who know the Icelandic language. In 1930 a collection of 50 of his children's poems were printed in Reykjavik. Dr. Johannesson was the founder and first editor of "The Youth", which is still published in Icelandic journals and papers in Winnipeg and Western Canada. In all his literary works he has

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expressed a kindliness and humanitarian view of life.

Nerée Beauchemin, 1850-1931, was born in Yamachiche, Quebec. He graduated in medicine in 1876 and immediately began to practice in his native village. He made a reputation as an excellent practitioner, and became one of our best French Language poets. In 1897 he published his first volume of verse entitled "Les Floraisons Matutinales", containing the poem by which he is best known, "La Cloche De Louisbourg". In 1928 he published "Patrie Intime". His lyrics are considered the most exquisite in French Canadian poetry.

Art

Robert Tait McKenzie, 1867-1938, was an athlete, a physician, and a sculptor of world wide fame. He was born in Almonte, Ontario, where he spent the greater part of his youth. He graduated from McGill in 1891 and shortly after became a demonstrator in Anatomy and took over on a part time



Sigurour Julius Johannesson

basis the physical education at that University. In 1904 he was appointed professor of physical education in the University of Pennsylvania, During his earlier years his excursions in the field of art had been limited to water color painting, but toward the beginning of this century he became interested in sculpture. His lifetime philosophy was to present human life in its finest physical state. At McGill, his attention to physical education led him to study the problem of fatigue in athletes. He was fascinated by the facial expressions of exhaustion and taking a purely scientific approach, he recorded his observations in a paper entitled "The Facial Expressions of Violent Effort, Breathlessness, and Fatigue". To illustrate this paper, he fell back not upon drawing, but upon his newly formed art of modelling. The result was four masks, which after refinement and development, were cast in bronze. McKenzie's sculpture was the first considered work since the time of the Greeks to take as its

subject and purpose the athletic ideal. The Almonte War Memorial and the Scottish American Memorial in Princes Street Gardens, Edinburgh, are typical examples of his post war work. In all his memorials, the hideousness of destruction is never depicted, but rather the theme throughout is that of youth's willing sacrifice.

Sir Frederick Bunting, 1891-1941. Of Banting's ability in the field of medical research and the



Robert Tait McKenzie



Sir Frederick Banting

monumental work that led to his discovery of insulin we are all aware. He also was well known and had attained considerable prominence as an artist. Banting never had a formal art lesson, but had a great deal of natural ability. With the encouragement and advice of A. Y. Jackson, he became a very creditable painter. Banting's first sketching trip was with Jackson in March 1927. On this trip they went to St. Jean Port Joli, a small French village on the south side of the St. Law-

rence River. In the same year he also accompanied Jackson to the Eastern Arctic on the government ship Beothic, and worked early and late sketching from the deck of the little steamer. He was never happier than when painting quaint and picturesque Quebec. On many occasions he travelled to Georgian Bay and the French River district, and there produced some of his best work. He was a prodigious worker and has been credited with 200



A. Blondal



Harry Norman Bethune

paintings. Banting's sketches are scattered far and wide. He took a sincere pleasure in showing them to his friends. He sent a few paintings to public exhibitors but only when he was urged to do so. His chief pleasure was in making them.

A. Blondal, 1890-1948. Dr. Blondal was born in North Dakota and lived for a time in Oregon before coming to Winnipeg. He obtained his medical degree in Manitoba in 1913, and following post graduate work in England and Scotland, he returned to Winnipeg where he practised obstetrics and gynaecology. Although he had received no formal lessons, Dr. Blondal was a talented artist. It was felt by those who knew him that had he chosen art as a career, he could have obtained recognition as an accomplished artist. He was responsible for a large number of paintings and etchings, many of which have been exhibited. He was one of a committee who drew up the design for the crest of the Manitoba Medical Association.

Henry Norman Bethune, 1890-1939, was born in Gravenhurst, Ontario and obtained his medical degree at the University of Toronto in 1916. His establishment of a systematized blood transfusion service in Spain during the Spanish Civil War, attracted world wide attention. He was also known as a skillful thoracic surgeon. A sufferer from T.B., he took the rest cure in Saranac, and during his convalescence in 1927, Bethune depicted the story



John Charles Webster

of his life in a series of murals. The murals formed a continuous coloured drawing 5 feet high and 60 feet long. They can be seen today on the walls of the fluoroscopic room of the tuberculosis unit of the University Hospital, Ann Arbor, Michigan. He took a keen interest in all artistic activities and in 1936 helped Mr. Fritz Brandtner found the children's art centre in Montreal.

History

John Clarence Webster, 1863-1950, Historian and Antiquarian. Dr. Webster was born in Shediac, New Brunswick in 1863. He received his medical education in Edinburgh, then studied in Leipsic and Berlin. He made a name for himself in Obstetrics and Gynaecology and for 20 years was chief of these departments at the University of Chicago and Chicago Presbyterian Hospital. He also had been a lecturer in Obstetrics and Gynaecology at McGill and staff member at the Royal Victoria Hospital.

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He did more for the preservation of historic sites in the maritimes, and perhaps in all of Canada, than any other man. Fort Beausejour Museum, The New Brunswick Museum, and the restoration of Forts at Louisburg, Nova Scotia, were largely the result of personal work and influence of Dr. Webster. His collection of Wolfe documents, maps and portraits was the most complete in the world. He was known too as an aviation enthusiast and was the donor of the Webster Trophy awarded annually to the amateur pilot who contributed most to Canadian aviation during the year.

David A. Stewart, 1874-1937, was born in Ontario and came to Manitoba with his parents in 1891. He graduated in Arts in 1899; spent two years in the study of theology, then renounced it in favor of medicine, graduating in 1906. He began his great crusade in the field of tuberculosis in 1910, and became its apostle in Western Canada. Travels in the province of Manitoba stimulated a desire within Dr. Stewart to know more of its early history. He became a member of the Champlain Society, examined first hand the remains of early fur trading forts of the Hudson's Bay Company, the Northwest Company and the X-Y Company, resurrected the Manitoba Historical Society, and became its president and moving spirit. He wrote a scholarly article on the life of Sir John Richardson. the Arctic explorer and was accepted as an authority on the history of Western Canada. In the field of art, although he had no formal instruction, he experimented in dry point, pencil sketching, and water colours. For several years his sketches appeared in the annual exhibitions of the Manitoba Society of Artists. During his later years he was physically handicapped, but never gave way to depression and worked on to the end. His son David, a Manitoba graduate of the late thirties, is the professor of Obstetrics and Gynaecology at the University of West Indies, Jamaica.

Among other Canadian medical historians of note are William Cannif, "Medical Profession In Upper Canada"; John J. Heagerty, "Four Centuries of Medical History In Canada"; J. W. Crane; Maude E. Abbott, "History of Medicine in the Province of Quebec"; Heber C. Jamieson, "Early Medicine in Alberta; The First Seventy-Five Years"; and our own Ross Mitchell, "Medicine in Manitoba; The Story of Its Beginnings".

Politics

Sir Charles Tupper, 1821-1915, was born in Amherst, Nova Scotia, and obtained his medical degree in Edinburgh in 1843. He returned to his native Amherst and soon acquired a large general practice. In 1855 he started public life as a member of the Nova Scotia Assembly, and in 1864 became premier of the province. He organized the conference at Charlottetown in 1864, for the union of the Maritime provinces under one government. He

played a prominent part in the passing of the British North America Act in 1867, and next to Sir John A. McDonald, he was the man who did most to bring about Federation of the Canadian Provinces. After holding different offices in the Dominion government, and at other times acting as High Commissioner for the Dominion in London, he became Prime Minister of Canada in 1896. He was joint Imperial Plenipotentiary with Lord



David A. Stewart



Sir Charles Tupper

Sackville and Right Honorable Jos. Chamberlain in negotiation of the Washington treaty of 1888 dealing with Atlantic fisheries and other questions in dispute between Canada and the U.S.A., and in that year was created a baronet. He retired from public life in 1900.

Sir Thomas Roddick, 1846-1923. Sir Thomas Roddick was a commanding figure in the medical and social world in Canada for nearly 50 years. He was the first surgeon in Montreal to follow Lister's methods and his energy and enthusiasm hastened

the practice of aseptic surgery in Canada. He was the first Canadian director of Medical services in a military campaign, The Riel Rebellion of 1885. Roddick's most enduring and notable piece of work was the bringing about of a reform which had been striven for by the Canadian medical profession for many years without success. This was the unifying of medical registration throughout Canada with its attendant benefits of improved education.



Sir Thomas Roddick



Sir John Christian Schultz

His statesmanlike handling of the apparently irreconcilable interests of the provinces and the various teaching bodies was impressive. It is stated that he entered politics with the express purpose of introducing the Roddick medical bill. He was elected to parliament in 1896, but being a member of the opposition, he was unable to introduce his bill until 1901, and it was not until 1912 that the Dominion Medical Council came into existence. Roddick's struggle in the intervening years is vividly described by his biographer, H. E. Mac-Dermot.

Sir John Christian Schultz, 1840-1896, politician and business man. He was born January 1, 1840, in Amherstburg, Ontario, and graduated in medicine at Queen's University in 1861. He came to the Red River shortly after graduation and set up a medical practice. However, it was not as a doctor but as a business man and politician that he made his mark He had a store and dwelling on Main Street, between Water Avenue and Notre Dame east, where he traded in furs. Through his North West trading company, and his interest in the South Western Railway Co. and Great North West Telegraph Co., he gained considerable wealth. In 1867-1868, he urged the western extension of confederation of provinces and was awarded the confederation medal. When Riel formed his provincial govern-



John Rolph

ment in 1869, Schultz' warehouse was besieged and he was arrested and incarcerated in a prison in Fort Garry. The following year he escaped and assisted in the release of other prisoners. A reward was offered for his capture dead or alive, but he eluded arrest and reached Ottawa after a toilsome journey. He returned to Manitoba and in 1871 was chosen to represent Lisgar in the Commons. He became a senator in 1883 and Lt. Governor of Manitoba in 1888. He died in Monterey, Mexico, in 1896.

John Rolph, 1793-1870. Dr. Rolph was distinguished as a politician and a successful practitioner of medicine while he stood high as a member of the bar. He was born in Gloucestershire in 1793, and came to Canada in 1812. He was recognized as a man of very remarkable intellectual powers. He graduated in both law and medicine in London, England, in the vicinity of 1820, having returned to England to complete his studies. The vast amount of energy which Dr. Rolph possessed was not exhausted in the two professions which he

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simultaneously followed, but he also took part in politics and was elected by the Reformers as a member for Middlesex in the General Elections of 1824. He participated in the McKenzie rebellion of 1837 and it is stated that a plan was discussed for establishing a provincial government with Rolph at its head. Following the collapse of McKenzie's attempt to take Toronto, Rolph escaped to the U.S.A. across the Niagara River. An offer of 500 nounds reward was advertised for his capture, but he remained in exile for the next five years until the ban was removed by an act of parliament. Subsequent to his return to Toronto, he gained a wide reputation as an excellent teacher of medicine. He founded the Rolph School of Medicine which in 1853 was incorporated under the title "The Toronto School of Medicine".

William Warren Baldwin, 1775-1844, was born in Ireland and obtained his medical education in Edinburgh. Shortly after his graduation he emigrated to Canada and settled in York where he practised medicine. After a short period of practice, he decided to take a hand at law. He was highly successful as a lawyer and may be called the father of the legal profession in upper Canada, His career presents a curious instance of that versatility which we have occasion to notice of the men who have been eminent in this country. It was no uncommon occurrence in the early days of Toronto when doctors were scarce, for Dr. Baldwin to be compelled to leave court in the middle of a trial. On one such occasion he rushed away to attend a confinement. When he returned, prepared to resume his interrupted argument, the judge expressed the hope that all had gone well with the patient, whereupon Baldwin replied, "Quite well. I have much pleasure in informing your lordship that a man child has been born into the world and that both he and his mother are doing well". He was elected member of parliament for the counties of York and Simcoe, and afterward the county of Norfolk in 1828.

There were other noted political leaders among early Canadian doctors, such as James Curtis Bird of Winnipeg, Sir E. P. Taché of Montreal, "Red" Michael Clarke of Red Deer, Alberta, and many others.

John McLoughlin, 1784-1857, Empire builder. McLoughlin was born in Quebec, obtained his medical education in Edinburgh, practised for a short time in Montreal and in 1803 received an appointment as resident physician in the North West Company in Fort William. From medical officer, he progressed to the post of chief trader and continued with the company following its amalgamation with the Hudson's Bay Company. In 1824, he was delegated to New Caledonia, as the district west of the Rockies was called, to found a fur empire in the Pacific Northwest. He ruled over a territory of 400,000 square miles, extending along the Pacific

coast from California to Alaska and southward to great Salt Lake where for years his word was absolute law, and he became a very important figure in the building of the Northwest. Nominally, he was the chief factor of the Hudson's Bay Company, but in reality, the uncrowned king of the Pacific coast. He was the founder and first great leader of the Hudson's Bay Company in Oregon, and became known as the "Father of Oregon". The peculiar



William Warren Baldwin



John McLoughlin

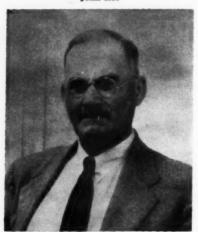
circumstances under which he was placed make McLoughlin's benefactions unique in history. It is a trite saying that had any other than McLoughlin been at the head of Hudson's Bay Company affairs in Oregon, American settlements might have been crushed in their inception. With all the savages at his command a single hint could have hurled the adventurous immigrants back across the Rockies. His life ended in tragedy; he was despised by the British because he helped American settlers, and hated by Americans because of

his British origin. His greatness was not appreciated till after his death.

John Rae, 1813-1893; Arctic explorer, was born in the Orkney Islands, studied medicine in Edinburgh, and became surgeon to a ship of the Hudson's Bay Company which visited Moose Factory each year. From 1835 to 1845, Rae was resident surgeon at Moose Fort. It is because of his travels in Canada and long association with the Hudson's



John Rge



James Naismith

Bay Company that I classify John Rae as a Canadian.

John Rae commanded or took part in several exploring expeditions in the Arctic regions. In 1848 he accompanied Sir John Richardson on one of these and in 1850 Rae himself took charge of an expedition which brought him very near to the scene of the Franklin disaster. On his next expedition in 1853, Rae succeeded in obtaining information about the fate of Sir John Franklin and his

men. His party thus gained the 10,000 pounds offered by the British government for the first definite news of Franklin's fate.

Rae's total travels in the Arctic by land and sea reached the figure of 23,000 miles, much of which was done on foot, dragging loaded sleighs or hauling boats for considerable distances overland. Before the termination of his services with the Hudson's Bay Company, Rae virtually completed the mapping of the North coast of the continent of America, proving conclusively that King William Land was an island.

James Naismith. 1861-1939. Dr. Naismith was born in Almonte, Ontario, and graduated in medicine from McGill University in 1887. He then entered Springfield College, Mass., as a physical instructor. One day in December 1891, Luther H. Gulick, director of physical training, during a pep talk to his staff, asked for suggestions for the creation of indoor games which were clean, free



Oronhyatekha

from rough play, conducive to physical development, and capable of cultivating team spirit. Dr. Naismith considered this a challenge and the same evening worked out the principles and rules of the game of basketball. The following day he asked for 2 boxes, 18"x18", and when these were not available, he obtained two peach baskets and fastened them to the gymnasium balcony. It is from this, that the name "basketball" received its derivation. The game of basketball was first played at Springfield College in December, 1891, and has since become the most popular indoor game on the North American Continent.

Oronhyatekha, 1841-1907, is the only member of this group of Canadians whose ancestors were also Canadians. He was born on an Indian Reservation near Brantford, Ontario. When the Prince of Wales visited Canada in 1860, Oronhyatekha was selected by the chiefs to present an address to the son of 954

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their great white mother. He made such a good impression, that the young Mohawk Indian was invited to continue his studies at Oxford where he obtained his medical degree. He returned to Canada and practised in London, Ontario. When in England, he became interested in the Independent Order of Foresters, and he organized a branch in Canada. In 1881 he was appointed supreme Chief Ranger of the Order, and this position he held until his death.

In compiling these few biographical notes of Canadian doctors afield, I am keenly aware of having omitted a large number of personalities very deserving of consideration at this time. I know that there are some members of the Winnipeg Medical Society who should have a place among this illustrious group of men. Uninformed persons have accused the medical profession of living in a small orbit. Nothing can be further from the truth. as history has shown. It is indeed gratifying to note the large number of doctors who have proved themselves capable in other fields of endeavour and who have made a worthy contribution to culture and humanity.

I would like to express my appreciation to Prof. I. MacLaren Thompson and Dr. Ross Mitchell for their very helpful suggestions.

> 332 Medical Arts Bldg... Winnipeg, Canada.

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Medical Library Evening Hours Sponsored by The Winnipeg Medical Society

The Library will be Open from 8 p.m. to 10 p.m. Monday through Friday from

November 1st to December 17th, 1954 and from January 3rd to April 29th, 1955 Regulations

(1) The Library Committee wishes it under-

stood that the Closing Hour of 10 p.m. will be STRICTLY ADHERED TO;

- (2) All Reading Room facilities available to Physicians and Students;
- (3) The Student on duty will assist in looking up subjects in the Quarterly Cumulative Index Medicus for the last ten years;
- (4) If previous references are required they should be obtained during the regular library hours (9 a.m. to 5.30 p.m.).
- (5) The stackrooms will NOT BE OPEN. October 8, 1954 The Medical Library Committee

Association Page

Reported by M. T. Macfarland, M.D.

Annual Meeting

The Forty-seventh Annual Meeting of the Association was an outstanding success. 445 doctors and 124 internes and students registered, making a total enrolment of 569. The Scientific Program prepared under the capable chairmanship of Dr. T. A. Lebbetter was of high standard and brought such guest speakers as Dr. G. F. Strong, President Canadian Medical Association, Dr. A. F. W. Peart, Assistant Secretary Canadian Medical Association. Drs. R. Dav. New York, J. H. Moore, Grand Forks, D. S. Munroe, Vancouver, E. M. Nanson, Saskatoon, and R. Wilson, Vancouver. In addition, Brig. J. N. B. Crawford spoke at the noon luncheon of the Defence Medical Association. The Commercial or Technical Exhibits arranged by Mr. J. G. Whitley were many and varied. The contribution of the exhibitors to the success of the meeting was recognized and they appeared to be amply repaid for their attendance.

Scientific Exhibits were not held, but a new feature which appears likely to become an annual event was the Hobby Show under the chairmanship of Dr. A. M. Goodwin. Appreciation is extended to participants and those who wish to be included next year should make reservations now.

Another feature of the meeting was the Tuesday evening panel "How Should a Doctor Plan His Retirement and Estate?", chairman of which was Dr. R. W. Richardson with Messrs. R. K. Berry, W. A. Johnston, S. B. Phipps and D. A. Thompson members. Light refreshments were served at the end of a successful evening.

The Annual Tea of the Ladies' Committee was held at the home of Mrs. Hartley Smith on Wednesday, October 13th, and the following day the wives of the Executive were hostesses to out of town guests at a coffee party held at the home of Mrs. Jack McKenty.

261 persons attended the Annual Dinner-Dance which was held on Thursday, October 14th. Following a reception and good dinner during which a trio provided light music, entertainment arranged by Dr. F. H. Smith was provided by Mr. Roy Firth, Misses Evelyne Anderson and Kaye Brown with Mr. Edward Lincoln as accompanist.

Later, Dr. C. Athol Gordon proposed a Toast to the Ladies which was responded to by Dr. Donna Huggins. Dancing was held in the Crystal Ballroom until midnight.

While the afternoon Business Session was poorly attended, there was a more representative turnout for the evening session when the President, Dr. W. F. Tisdale, gave a splendid address on the subject of "Reading" and, at the Business Session which followed, other reports dealing with economic matters including a report on Manitoba Medical

Service by Dr. P. H. T. Thorlakson were presented

A copy of printed Committee Reports appeared in the November Review and is not reproduced here. Hearty thanks is extended to all participants.

Officers

As a result of balloting during the Annual Meeting, the following slate of officers was selected to guide the affairs of the Association during the year 1954-55:

President: Dr. R. W. Whetter, Steinbach.
First Vice-President: Dr. R. Lyons, Winnipeg.
Second Vice-President: Dr. J. E. Hudson,
Hamiota

Honorary Secretary: Dr. W. H. C. North, Carman. Honorary Treasurer: Dr. J. McKenty, Winnipeg. Member at Large, Rural: Dr. R. S. Harris, Virden. Member at Large, Winnipeg: Dr. A. B. Houston, Winnipeg

A meeting of officers was arranged for Nov. 5th and the conjoint meeting of old and new Executive Committees met on Sunday afternoon, November 14th

Manitoba Medical Service

A Nominating Committee appointed by the President and Executive Committee presented a list of seven nominees to serve a term of three years beginning in March, 1955, on the Board of Trustees, Manitoba Medical Service. Two additional nominations were received from the floor at the time of the Annual Business Meeting, and mail ballots containing nine names, seven to be selected, were mailed to each current member of the Association. In order to be included ballots were returnable to the Association office on or before November 15th, and the results will be announced when counting has been carried out by the transferable ballot system.

Brandon and District Medical Association

The Fall meeting of the Brandon and District Medical Association was held in the Recreation Hall of the Manitoba Sanatorium, Ninette, at 3 o'clock on Wednesday, November 3rd.

Present were: Drs. M. M. Atkinson, Ninette; J. B. Baker, Brandon; M. Bowman, Winnipeg; Wm. Bowman, Winnipeg; A. M. Clare, Neepawa; A. J. Elliott, Oak River; H. S. Evans, Brandon; E. R. Gubbay, Winnipeg; W. K. Hames, Hamiota; W. P. Hirsch, Brandon; J. E. Hudson, Hamiota; N. M. Kester, Wawanesa; K. H. Krueger, Ninette; A. P. Lapko, Brandon; F. J. Lone, Killarney; M. T. Macfarland, Winnipeg; P. Mari, Ninette; A. L. Paine, Ninette; F. K. Purdie, Griswold; E. L. Ross, Winnipeg; W. Shahariw, Brandon; Wm. Sharman, Minnedosa; J. R. Stratton, Killarney; R. W. Whetter, Steinbach; W. Zajcew, Ninette.

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Technical and nursing personnel from Manitoba Sanatorium, Brandon Mental Hospital and Hamiota General Hospital were also present.

The following papers were presented:

1. Presentation of case reports of Diabetes Mellitus by Doctors F. J. Lone of Killarney, and M. Atkinson of Ninette. These cases were discussed by Dr. Eric Gubbay of Winnipeg.

2. Dr. Wm. Bowman of Winnipeg, spoke on the subject of Diarrhoea in Infancy. Dr. A. M. Clare of Neepawa contributed to the discussion.

3. Dr. W. Zajcew — A resume of tuberculosis cases treated in the Ninette Sanatorium, 1953-1954. Discussion followed by Drs. A. L. Paine and E. L. Ross.

Following a reception at the home of Doctor and Mrs. A. L. Paine, dinner was served to members and wives following which Doctors R. W. Whetter, President-Elect and M. T. Macfarland, Executive Secretary, brought greetings from the Manitoba Medical Association, and Mr. Chris Thorsteinson delivered a splendid address on the subject of Alcoholics Anonymous. A vote of thanks was moved by Dr. J. E. Hudson.

General Practitioners' Association Officers Elected for 1954-1955

President: G. F. Hamilton
1st Vice-President: J. F. Edward
2nd Vice-President: D. J. Hastings
Secretary: A. J. Winestock
Corresponding Secretary: R. O. Flett
Treasurer: L. J. Mongeon
Executive Members:
A. G. Henderson, M. R. Hodgson,
E. Johnson, J. Swan

The Post-Graduate Series of Lectures under the auspices of the General Practitioners' Association of Manitoba is once again to be held this winter. Subjects: Surgery (in all its aspects).

Place: Pathology Lecture Theatre, Main Floor, Manitoba Medical College.

Time: 8.15 p.m. each Wednesday night.

Fee: \$15.00 for course (free to Internes and Residents).

Last winter the course did not get rolling until after Christmas; this year we will begin on the 3rd of November and every Wednesday thereafter up to and including the 22nd of December. In this way half the course of sixteen lectures will be completed by the New Year. The other dates will be 5th January, 1955, to 23rd February, 1955.

The course is being arranged by Dean L. Bell; Dr. C. Ferguson, Professor of Surgery; and Dr. Jack Waugh.

Those who are active members of the newly formed College of General Practice of Canada will be interested to learn that this course will be counted as a credit to the 50 hours per year required in the charter.

It is hoped that as many rural members as possible will be able to attend — even one or two lectures will be worthwhile.

Glen F. Hamilton.

College of Physicians and Surgeons of Manitoba

As a result of balloting held during the past summer, and selection by lot at the Annual Meeting of Council on October 16th, the following members constitute Council for the term stated:

Four Years, 1954-1958

Electoral District 2—Dr. Ed. Johnson, Selkirk.
Electoral District 3—Dr. G. H. Hamlin, Portage la Prairie.
Electoral District 6—Dr. F. J. E. Purdie, Griswold.
Electoral District 7—Dr. F. K. Purdie, Brandon.
Electoral District 9—Dr. R. E. Dicks, Dauphin.
Electoral District 11—Dr. R. E. Beamish, Winnipeg.

Dr. A. E. Childe, Winnipeg. Dr. C. E. Corrigan, Winnipeg.

Faculty of Medicine—Dr. C. H. A. Walton, Winnipeg.

Two Years, 1954-1956

Electoral District 1—Dr. F. P. Doyle, St. Anne des Chenes.

Electoral District 4—Dr. S. S. Toni, Altona. Electoral District 5—Dr. A. L. Paine, Ninette.

Electoral District 8—Dr. T. W. Shaw, Russell. Electoral District 10—Dr. P. Johnson, Flin Flon.

Electoral District 11—Dr. J. M. Kilgour, Winnipeg. Dr. M. R. MacCharles, Winnipeg.

Dr. M. R. MacCharles, Winnipeg Dr. C. B. Stewart, Winnipeg.

Faculty of Medicine—Dr. A. R. Birt, Winnipeg.
At the same meeting the following officers were elected:

President: Dr. C. H. A. Walton, Winnipeg. Vice-President: Dr. P. Johnson, Flin Flon. Registrar—Dr. M. T. Macfarland, Winnipeg. Treasurer: Dr. T. H. Williams, Winnipeg.

Victorian Order of Nurses

Rehabilitation

Last fall 386 Victorian Order Nurses attended the rehabilitation conferences conducted by Miss Helen Anderson, assistant professor of nursing education, University of Washington, at eight centres across Canada. Six months after the conferences, a questionnaire was sent to each of these nurses.

The purpose of six months evaluation was to determine what effect the conference had on patient care and family instruction, and to ascertain to what extent the nurses were sharing the conference content with new staff and other nursing groups.

The response to the questionnaire was good. Care to patients with long term illness has been markedly affected according to 96% of the nurses. The questionnaire replies illustrate the enthusiasm with which the nurses are putting into practice

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CORICIDIN with Codeine 1/8 gr. or 1/4 gr.

Each coated tablet contains:

Acetylsalicylic acid	0.23 Gm. (3½ gr.)
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Caffeine (alkaloid)	0.03 Gm. (½ gr.)
Chlor-Tripolon maleate*	2.0 mg. (1/30 gr.)
Codeine phosphate	0.016 Gm. (1/4 gr.)
or	0.008 Gm. (1/8 gr.)

*Brand of chlorprophenpyridamine maleate.



the principles of posture and body mechanics to assist with patient rehabilitation.

Many excellent examples of the rehabilitation aspects for patient care have been outlined. One man of 75 years had had a stroke two years ago. When he left hospital his son and daughter were unable to take him into their homes because of limited space and large families. They arranged for him to board with a young couple who could provide him with the care he needed. The old man became more and more dependent upon the young couple and expected to be waited upon rather than trying to assist himself. He became such a burden to the young couple that his son and daughter were asked to make other arrangements for his care. While the son and daughter were attempting to find a solution to the problem the V.O.N. was called in.

The nurse found that the old man was discouraged and depressed by his physical limitations and had developed an attitude of "Why try to help myself if someone else will do things for me." The nurse encouraged him to move first in bed, then to sitting position and then to a chair. Finally the patient was taught to use a cane and soon he was walking with only the presence of someone behind him for confidence. Both his family and the family with whom he is living were delighted with the change so the young couple agreed to allow him to stay with them and the problems of care were overcome.

Another nurse reports on a patient who had been in bed for 14 years during which period he has had several strokes resulting in paralysis of the right arm and leg. Since he is a heavy man the family found they could not get him out of bed so left him there, feeding him well and keeping him clean and comfortable.

Using the techniques demonstrated at the rehabilitation conference the nurse taught the family to get the patient out of bed, standing and finally walking with assistance. He can now walk from the bedroom to the kitchen with a member of his family supporting him.

Many other illustrations of patient progress could be cited but it is enough to say that patients and families are sharing the nurses enthusiasm for the rehabilitation aspects of nursing care.

In many branches of the Victorian Order of Nurses the nurses have shared their knowledge with new staff members and with post-graduate and undergraduate students.

For Winnipeg V.O.N. call 92-8529.

REMEMBER

Winnipeg Medical Society BENEVOLENT FUND

Subscriptions may be sent to 604 Medical Arts Building

A vagal blocking agent for peptic ulcer with LOW incidence of SIDE EFFECTS

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smooth therapeutic maintenance — uniform and predictable response, clinically proved here and abroad

long duration of action, more consistent and reliable in its hypotensive effects, particularly when given orally

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vials 10 c.c., 5 mg. per c.c.

30 c.c., 25 mg. per c.c.

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Arobon permits prevention of estival diarrheas (1% to the milk formula).

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Suggested Dosage: 6 Package: 3 oz. Write for sample to	One level teaspoonful daily. jar (30 day treatment) 5 525 Lagan Ave., Toronto \$at all pharmacies	B ₁₂
E. B. Shuttle		ed Tixon

1954

Department of Health and Public Welfare

Comparisons Communicable Diseases — Manitoba (Whites and Indians)

	1954		1953		Total	
DISEASES	Oct. 3 to Oct. 30,'54	Sept. 5 to Oct. 2,'54	Oct. 4 to Oct. 31,'53	Sept. 6 to Oct. 3,'53	Jan. 1 to Oct. 30,'54	Jan. 1 to Oct. 31,'53
Anterior Poliomyelitis	7	8	157	464	115	2289
Chickenpox		72	76	40	1476	1080
Diphtheria	0	0	0	0	0	4
Diarrhoea and Enteritis, under 1 yr.	19	10	18	16	138	184
Diphtheria Carriers		0	0	0	0	0
Dysentery—Amoebic		0	0	Õ	0	0
Dysentery—Bacillary		2	3	2	20	19
Dysentery—Bacillary Carrier	0	0	0	0	1	0
Erysipelas	2	3	0	1	25	27
Encephalitis	0	3	0	3	4	11
Influenza		6	16	6	79	230
Measles		32	53	11	922	2338
Measles—German		0	1	0	14	40
		2	3	1	20	31
Meningococcal Meningitis Mumps	72	24	32	26	1015	898
Ophthalmia Neonatorum	0	0	0	0	0	0
Puerperal Fever	1	0	Õ	ŏ	1	1
Scarlet Fever	36	23	33	19	458	343
Septic Sore Throat		0	5	7	48	88
Smallpox	ñ	Õ	0	Ó	0	0
Tetanus		ő	ñ	o o	2	2
Trachoma	0	0	ñ	0	. 0	0
	73	54 .	9	53	575	758
Tuberculosis		0	0	0	3	0
Typhoid Fever		0	0	ů.	0	0
Typhoid Paratyphoid	0	0	0	0	0	0
Typhoid Carriers	1	0	2	1	6	12
Undulant Fever	88	39	11	22	191	178
Whooping Cough	199	103	113	128	1146	1063
Gonorrhoea	1	6	4	5	85	69
Syphilis Infectious Jaundice	97	14	16	21	294	274
inicctious baundice	0	1	0	-0	2	217
Tularemia .	U	1	U	U	4	2

Four-week Period October 3rd to October 30th, 1954

DISEASES	pa	861,000 Saskatchewan	9.0	2,952,000 Minnesota	
(White Cases Only)	000 vito	000 kato	5,00	2,00 1nes	
*Approximate population.	*809,000 Manitoba	861, Sas	*3,825,000 †Ontario	*2,95 Min	
Anterior Poliomyelitis	7	36	40	86	
Chickenpox	145	18	745		
Diarrhoea and Enteritis, under 1 yr.		6			
		-	2	2	
Diphtheria		1	2	2	
Diphtheria Carriers	0.414	2		1	
Dysentary—Amoebic	1	1	8	23	
Dysentery—Bacillary Encephalitis Epidemica	1	1	0	5	
Erysipelas Epidemica	9	1	2	0	
Influenza	9	2	19	.5	
Jaundice, Infectious	27	71	33	147	
Malaria	41	2	00	1	
Measles	63	5	224	179	
German Measles	00	3	68	210	
Meningitis Meningococcus	4	U	2	7	
Mumps		31	395		
Ophthal, Neonat.					
Puerperal Fever					
Scarlet Fever	36	9	122	25	
Septic Sore Throat	4	14	1	35	
Smallpox					
Tetanus				F-0.51	
Trachoma	****				
Trichinosis			1	****	
Tuberculosis	73	64	85	109	
Tularemia	****	-	1	***	
Typhoid Fever		2	3	1	
Typh. Para. Typhoid			1	***	
Typholu Carriers			-		
Typhus		P.A.	1	40	
Undulant Fever	1	10	2	10	
Whooping Cough	86	19	632	91	
Chara 3- 13.1	122		233	N. (E)	
Sypnus	4		68	****	

DEATHS FROM REPORTABLE DISEASES, OCTOBER.

Urban—Cancer, 48; Pneumonia, Lobar (490), 6; Pneumonia (other forms), 12; Tuberculosis, 5; Diarrhoea and Enteritis, 1; Septicaemia and Pyaemia, 1. Other deaths under 1 year, 21. Other deaths over 1 year, 221. Stillbirths, 10. Totals, 252.

Rural—Cancer, 32; Lethargic Encephalitis, 1; Pneumonia,
Lobar (490), 4; Pneumonia (other forms), 3; Tuberculosis,
4; Diarrhoea and Enteritis, 3; Meningococcal Infections,
2. Other deaths under 1 year, 16. Other deaths over 1 year, 161. Stillbirths, 13. Total, 190.

Indians—Cancer, 1; Influenza, 1; Pneumonia (other forms),
1; Infectious Hepatitis, 1; Diarrhoea and Enteritis, 1.
Other deaths under 1 year, 1. Other deaths over 1 year,
3. Stillbirths, 1. Total, 5.

Diphtheria—That zero for Manitoba across the board in 1954 to date, is most encouraging to public health workers!

Puerperal Fever.—The one case reported was a young married woman who had no prenatal care.

Venereal Diseases—Slightly increased over last year at this same date.

Insofar as communicable diseases are concerned the health of the people in Manitoba at this time is very good.

Detailmen's Directory

Representing Review Advertisers in this issue, whose names are not listed under a business address.

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